THE FARMERS' CABINET,

AND

AMERICAN HERD-BOOK.

DEVOTED TO

AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

Perfect Agriculture is the foundation of all trade and industry.—Liebig.

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For the Farmers' Cabinet.

Gardening as a Science.

I HOPE neither the editor nor his readers will be frightened by the heading of my paper. Under this title, I find quite an interesting and common-sense article in the May number of Paxton's beautiful Magazine of Botany. Why should any of us plain farmers, who sometimes give scope to our reflective powers, be startled at the idea of introducing system and rules, founded upon the reasons of things, into the every day operations of the garden, the corn field and the manure heap? I have made, and herewith offer for the Cabinet, if deemed suitable, some extracts from the paper referred to, believing they would afford instructive matter for thought to many of your readers, as they have done to myself. We may recollect, that the same difficulties which attend us in our attempts to understand how the most delicate plant that the amateur can botanize upon, obtains and elaborates its nutriment, also present themselves when we inquire into the growth of those of larger and more stately dimensions. The same perfect law of nature, which enables the spongiole of the minutest herb to meet all its wants, equally, and similarly operates in the growth of the corn, the wheat, and the giant oak. And who is the farmer, that has walked through his corn-field after a shower of a hot summer evening, and almost heard the plant cracking with its very thrift, that has not involuntarily made the inquiry in his own mind:—whence comes this wonderful power of vegetable growth? how are its demands satisfied, and who shall explain the hidden processes by which the mysterious principle of *vitality* is sustained? But hear our author:

"There is no one subject in the science of horticulture, which involves so many difficulties, as the method by which plants receive and elaborate nutriment, so as to increase in volume, and at the same time deposit within certain vessels or cells, the peculiar fluids which characterise, and are specific to each individual.

"There are received notions which have been adopted, and appear to satisfy most persons; yet we must admit that the whole process is surrounded with inextricable difficulties, which perhaps may never be removed; but there are a few simple truths that, if duly investigated, will evince that a great deal too much has been incautiously taken for granted.

"The term *sap* is perfectly familiar to every one: it is supposed to be the prime

source and origin of all nutriment; that it is prepared, first, in the ground, then passes into, or is attracted by, that most recently formed and porous termination of each fibre of the root, which we are taught to style *spongiole* or spongelet, and is conveyed thence by some propelling power upwards, to and through every organ of the plant, which it thus supplies with appropriate food.

"Writing upon the sap of plants, Professor Henslow says:—'The *crude* sap introduced at the roots, consists of nearly pure water, containing only a very small and variable per centage of certain saline, earthy, and gaseous matters in solution. It is a very common opinion, and one upon which most erroneous notions are sometimes built by practical men—gardeners and others—that this crude sap is directly employed in the nourishment and development of the various parts of the plant. There is much plausibility in such an assumption. Every one acquainted with the practice of pruning, is aware that, by cutting away some parts of a plant, he contrives to throw the rising sap into other parts; and he finds that in consequence of such treatment, these latter parts are better nourished, and become more developed than they otherwise would have been; but in spite of so plausible an experiment, the crude sap is not nutritious; we might as well declare that we can receive nourishment from a weak dose of Epsom salts, or grow fat upon soda water. Living bodies, whether vegetable or animal, can only be nourished and developed by organic matter. Now, crude sap may very possibly not contain a single particle of organic matter. The mystery is explained by the fact which physiological botany has ascertained, that plants are endowed with the peculiar faculty of preparing organic matter for themselves, out of the materials which the crude sap contains.'

"Crude sap is generally said to consist of water, holding in solution a quantity of carbonic acid, derived from the decomposition of decaying manure or vegetable matter in the soil; but the notion is as crude and ill-digested itself, as any thing can possibly be. In fact, we know not what this sap is, or how it can be collected. If we take either the oozings of the vine, the subject best at command, at early spring, when every recently pruned shoot emits at certain recurrent periods of the day, drops of apparently limpid water; or collect the sap of the birch tree, by boring into its stem; we obtain sap, doubtless, but always more or less blended with the prepared juices of the stem and bark. Assuming however, the droppings of the vine as a type, we find a liquid almost insipid, but which—so far as our test of lime water can determine—yields no trace of carbonic acid, but gives a very perceptible deposition of lime, by adding a minute particle of oxalic acid to the sap. This acid possesses an affinity for lime, so strong, that a union with it takes place when the proportions of each are very minute, and diffused through a considerable volume of water.

"Crude sap, therefore, if it ever be met with pure, cannot be said to contain organized matter; but we may readily admit, that any matter capable of solution in water absorbed by the root, will pass with it into their vessels; and such soluble matters may be common salt, nitre, potassa, or lime,—also that peculiar compound of oxygen and charcoal, which we call *carbonic* acid; but assuredly the most minute particle of any organized solid substance, even though its bulk do not amount to the thousandth part of a grain of dust, can never enter the spongelets of the root.

"To recur to Professor Henslow:—'Not one,' he says, 'of all the chemists whom the world has yet seen, has been able to combine the elements of inorganic matter, so as to form out of them a single organic compound. They can change one organic body into another, as starch into sugar; but they cannot make either starch or sugar directly from the elements of which they consist. It is to the vegetable kingdom alone that this wonderful faculty belongs, and it is by the leaves of plants that the operation is carried on. The crude sap is merely instrumental in supplying the leaves with the materials necessary for the formation of organic matter; it is the proper juice created by the leaves, and in which such variety of organic matters are dissolved, which forms the real nutritious fluid of the plant, as blood does that of the animal. The importance of retaining all the leaves, whilst they are still living, upon a plant, is sufficiently evident; not one of them can be abstracted or injured, without the plant being deprived of a certain amount of "power" for generating its "proper juice."'

"*Carbonic* acid is emitted from the lungs of breathing animals; and it is proved that, under certain conditions, plants produce it also. But have we any reason to suppose that the roots absorb it from the soil? Philosophers assert the fact, but we question the possibility of arriving at the proof.

"The living principle—that vitality which prevents decay, which repels the effort of chemical agency, is the great mystery upon which every phenomenon depends. We are on this point utterly ignorant; all our researches and most refined investigations

lead only to conjecture; and so it is throughout. Natural philosophy is an interesting and beautiful study,—it displays wonder everywhere; but we in vain endeavour to search into causes.

"It were wise, therefore, to cease from appealing to chemistry, as a clue to the processes of assimilation and organic action: chemistry can only investigate the products of dead or inert matter; and in vegetable structure it teaches that its ultimate elements, as shown by analysis, are four gases, —oxygen, hydrogen, carbonic acid, and nitrogen, and some saline and earthy substances, in the form of ashes. Manures, earths, and soils, contain the same elements, and therefore we are instructed to apply these substances in order to furnish the rough materials of sustenance; and herein we observe analogy between the vegetable and animal kingdoms. Food must be taken into the systems of both,—or rather, those elements must be supplied which the vital principle can elaborate and assimilate, so long as the several functions retain their vigour of health.

"The *principle of vitality* remains a profound secret, and we are placed in the dilemma between two opinions—1st, Whether the living plant be to a certain extent endowed with sensation and a power of volition, so as to imbibe at pleasure, according to its necessity, the crude aliment which is appropriate to its temperament; or, 2nd, Whether it be acted upon solely by the external agents, air, water, light; electricity producing and keeping up a sort of galvanic process, which prepares the sap and propels or attracts it into suitable channels."

The mind is lost in the contemplation. We feel that

"Not a tree,
A plant, a leaf, a blossom, but contains
A folio volume. We may read and read,
And read again, and still find something
new."

We may pursue our speculations, and follow the chemist into his laboratory, witness the delicacy and exactness of his analyzations, but after all, however we may have been gratified, and even instructed in our inquiries, we are obliged to give up the pursuit, and acknowledge our entire inability "to make one hair white or black." We are entirely incompetent so to arrange the elements of inorganic matter, as to form out of them, even the semblance of the minutest organic compound. We must refer the whole train of vital phenomena to the hitherto unexplained, and perhaps inexplicable laws of Creative Wisdom, contenting ourselves with observing results, and still consenting to study the most beneficial applications of increased knowledge. Z. Y.

Gloucester co., N. J.

For the Farmers' Cabinet.

Milk.

HAVING recently seen a litter of fine pigs of four months old, that have increased in weight a pound a day, each, since their birth, and had been fed exclusively on milk, I was induced to look into the composition of an article which is thus capable of supporting animal life, without any other food, and of building up such carcases, composed of bones, meat, fat, skin, bristles, hoofs, &c.

Chemists say that cows' milk is composed of the following articles, viz:

Cheese, - - - - - -	4.48 per cent.
Butter, - - - - - - -	3.13 "
Sugar of milk, - - - -	4.77 "
Salts and mucus, - - -	0.60 "
Water, - - - - - -	87.02 "
	100.00

And the above articles, when analyzed, are found to be composed of carbon, oxygen, hydrogen, nitrogen, and various saline and earthy substances.

A French chemist states, in treating on the phenomena presented from microscopic observation, in the transformation of cream into butter, that the cream consists of the globules of the milk, which rise to the surface from their lightness, and which contain the butter in the form of pulp, enveloped in a white, thin and elastic pellicle. The action of the churn, he says, produces nothing more than the rupture of the pellicle, and it is the fragments of this pellicle which whiten the liquid called butter-milk.

When cows are fresh and are fed with nutritious food, the quantity of butter contained in these pellicles is greater, and the covering is thinner, and consequently less agitation in the churn breaks them, and the butter comes much sooner than it does when they are fed sparsely on articles containing but little nutriment.

The sugar of milk is obtained by evaporating the whey to the consistence of honey; the saccharine matter remaining dissolved in the whey after the curd is formed. A.

LADIES, VEIL NOT YOUR FACES!—A celebrated writer on sight, says that the wearing of veils permanently weakens many naturally good eyes, on account of the endeavours of the eye to adjust itself to the ceaseless vibration of that too common article of dress.

For the Farmers' Cabinet.

The Tomato.

We often hear it said, that a relish for this vegetable is an acquired one; scarcely any body at first, liking it, but eventually every one becoming fond of it—if not prepared in every way, at least when prepared in some way or another—or it may hap, raw, without any preparation at all. It has, indeed, within a few years come into very general use, and is considered a particularly healthy article. It delights in rich ground, and is an abundant bearer. No farmer's or cotter's garden should be without it. His family, if like the writer of this, will soon want their tomatoes,—once,—twice,—three times a day,—morning, noon, and evening! A nice way to keep the plant erect, and the fruit from the ground, is to drive down four stakes, so as to make a square of, say, two feet each way, around the plant, and then wrap three or four wisps of straw or matting, at suitable distances around the stakes. These will keep the vines from falling, and expose the fruit nicely to the sun for ripening. They will bear till frost.

I have already said I am a great lover of tomatoes; and as this is their season—and as housekeepers, as well as their *lords*, have been invited to throw in their mite to make the Cabinet useful—which, by the way, I take pleasure in looking over—I thought I would cull some receipts from my book. Do with them as you like. Though they may have been published before, they may perhaps, again be worth their room.

Susanna P.

Newcastle, Del.

Tomatoes, instead of Cucumbers.—Treat them much as you would cucumbers. Peal, and slice them; season with plenty of salt—pepper and vinegar to your taste.

Tomato Catsup.—To half a peck of pealed tomatoes, put four table-spoonfulls of good salt—four do. black pepper—half do. allspice—three do. mustard, and eight red peppers, all ground fine, and simmered slowly with the tomatoes in sharp vinegar, for three or four hours. Use as much vinegar as to leave half a gallon of liquor when the process is over. Strain through a sieve, bottle and seal from the air. It may be used in a fortnight, but improves by age, and will keep for years.

Stewed Tomatoes.—Peal, slice and stew them slowly. When done, season them—thicken a little, and put in a small lump of butter, and eat them as you would apple sauce. If you have them thus prepared, with good roast beef, properly manufactured—sweet potatoes, and lima beans,—and President Tyler should pop in upon you, unexpectedly to dine, you need wish nothing better: you'll find them first rate.

Tomatoes with beef-steak.—Cut them in two, lay the flesh side upon the gridiron, over pretty hot coals, for a few minutes—turn them—season them well, with pepper and salt, and when done, dress them with butter, or eat them with gravy, as suits you best.

Tomato preserves.—Prepare a syrup by clarifying sugar, melted over a slow fire with a little water, boiling it till no scum appears. Take the tomatoes when quite green, peal them, and put them in cold syrup, with one orange sliced to every two pounds of your fruit: take pound for pound, of sugar; simmer them for two or three hours over a slow fire. When a superior article is wished, add fresh lemons sliced, and boil with the tomatoes a few peach leaves, and powdered ginger in bags. Tomatoes even when ripe, make a fine preserve, treated as above; but unless great care is used in the process, they will fall to pieces.

Tomato figs.—Take six pounds of sugar to one peck, or sixteen pounds of the fruit. Scald, and remove the skin in the usual way. Cook them over a fire, their own juice being sufficient without the addition of water, until the sugar penetrates, and they are clarified. They are then to be taken out, spread on dishes, flattened and dried in the sun. A small quantity of the syrup should be occasionally sprinkled over them while drying; after which, pack them down in boxes, treating each layer with powdered sugar. Boil the remainder of the syrup, and bottle it for use. They will keep from year to year, and retain a nice flavour. The pear shaped, or single tomatoes, answer the best purpose.

Tomato Tart.—Roll out your dough very thin, and place it on the plate in which you intend baking your tart, and slice your tomatoes very thin; spread them over the dough also very thinly, take about two table spoonfulls of brown sugar, and one of ground cinnamon bark, spread the two over the tomatoes, bake it well, and you have a delightful tart.

Pickled Tomatoes.—Place your tomatoes in layers, in a pickling jar with garlic or shred onions, mustard seed, horse raddish, red pepper, spices, &c., as wanted, until the jar is filled. A little salt must also be added, as the layers are put in. When the jar is filled, pour over the tomatoes, good cold cider vinegar, till all are covered, then close up tight for use.

TOMATO OMELET.—Slice and stew your tomatoes. Beat up half a dozen fresh eggs, the yolk and white separate; when well beaten, mix them with the tomato—put them in a pan and fry them, and you will have a fine omelet.

TOMATOES FOR WINTER.—They may be preserved for winter use, by placing them in layers with salt, in jars or tight boxes. When wanted, they must be soaked in water, as you soak cucumbers preserved in the same way. Some stew the tomatoes till well cooked, then spread the mass on plates, or other smooth surfaces, and dry them fully, when they can be put in bags, and kept in a dry place.

Some are fond of them raw—eating them as we eat an apple.

For the Farmers' Cabinet.

Wheat.

WHEN we recollect that the wheat crop of the United States is more than one hundred millions of bushels, we at once perceive its vast importance, and can more readily appreciate the value of any suggestions that may lead to its preservation, or increase. This is the season for putting it in the ground, and I make this short communication, in order to remind my brother farmers of the expediency of practising upon the many hints, which have from time to time, been published, so far as their judgment may approve of them, or their love of enterprise induce them to experiment.

In the first place, good seed is essential; and I believe we shall always be gainers, if we first wash it well in water—then again in strong brine—and then, while it is damp, roll it well in plaster of Paris. We should be careful too, to get it in the ground early. For the last few years, the early sown wheat and rye, have very decidedly fared the best. When the late sowed, has been injured, or almost ruined by the rust, that which has ripened early, has entirely escaped. Colonel Barclay, in his Agricultural Tour through our country, gives it as his opinion, that we are almost uniformly too sparing of our seed: this also is becoming the opinion of some of our best wheat growers. The kind of wheat, too, is an important consideration, and must be fixed upon, according to the best judgment of the grower. The Mediterranean variety is getting much into favour: and where the ground is light, and in but middling heart, we are inclined to think it is the best. When the farmer is about to sow his wheat without manure, he can hardly do better than to sow the Mediterranean. A friend, a day or two ago, informed me that Elisha Bassett, of Salem, N. J., sowed a field of this kind of wheat among his corn last fall, and the crop, which is now threshed, yielded 34 measured bushels; and the extra weight made it equal to 36 bushels per acre.

R. N.

Sweedesborough, N. J.

The Locusts.

TO THE EDITOR OF THE BALTIMORE AMERICAN—A paragraph in the American of this morning, copied from the Newark Daily Advertiser, states the fact that the "eggs of the seventeen year locusts are now hatching;" describes the young insects very accurately, except as to the size, which is represented to be a third of the size of a grain of rice,* and concludes by observing: "This is, we believe, the first discovery of the time of the quickening of the eggs." Permit me to state, that this quickening of the eggs was discovered and fully described by me in 1834, as was every particular of the habits of the insect, from the time of leaving the ground to the return of the young insects to it in August, and until the setting in of winter, when they disappeared from view. In fact, I then prepared a complete history of the insects, embracing every item, except the location of the various districts of country in which they appear. To enable me to complete this part, which, next to the length of time they require to complete the cycle of their existence, is the most curious part of their history, I have deferred publishing the work in full to the present time. I have now full information of the existence of twenty-four distinct Districts, in which they appear; and twelve of the seventeen years which form the cycle of their existence. I hope yet to obtain information of the appearance of the insects in each of the other five years, but fear that these years are occupied by them in the Western wilds, whence the information cannot be obtained, until those parts of the country are more fully occupied by inhabitants. The years in which I have not been able to hear of the appearance of the locusts, are 1827, 1837, 1839, 1840 and 1841, with their corresponding terms of seventeen years. If any person knows of their appearance in either of those years, I shall be greatly obliged by the information. I herewith send you a *plate* representing the insect in all its stages. The egg and the young insect are magnified one thousand times.

Respectfully,

GIDEON B. SMITH.

Baltimore, Aug. 26th, 1843.

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* The young insect is one-twelfth of an inch in length, and one seventy-second of an inch in width.

From the American Agriculturist.

City Manures.

I have lately read in the Bath and Cheltenham Gazette, published in the city of Bath, England, that a Professor Daniels had taken a patent for a new compost, composed of wood saw-dust, charcoal, lime, and a small quantity of bitumen. It stated he had secured patents in England, France, Germany, and this country. If any reliance can be placed on the account given in that paper of its fertilizing power, it must far exceed all other known composts. It stated that the professor had taken a given quantity of land, on which he had raised wheat four years in succession, increasing the product every year. Our farmers must be aware that this has ever been considered impossible. The first year the land was in its usual condition, and the crop was twenty-six bushels to the acre; the second year he applied some of his compost, and the crop was thirty-six bushels; the third year he added more of his compost, and the crop was forty-six bushels; the fourth year he gave more of the compost, and the crop was fifty-six bushels. He expressed himself confident of bringing the crop up as high as one hundred bushels to the acre.

Our farmers on Long Island, and in New Jersey, must be aware, that their only chance of making money by farming, will be by an increase of crops; for our railroads will enable distant farmers to send their produce to our markets, at a very trifling cost of transit. Those of our farmers, therefore, who are wise, will avail themselves of every means of increasing their crops, as the only chance of breasting the competition with distant opponents, who produce from new soils, on land of one-tenth the value.

It has been long known that decayed wood, frequently found on wood land, was much valued by the horticulturists. I often had it collected, in England, for my own garden; but as it was not very abundant there, it was always used on the flower beds.

From the number of saw-mills at work in the cities of New York and Brooklyn, the annual supply of wood saw-dust must be very large; and I would advise some of our enterprising farmers to collect and try it in their compost heaps, adding slacked lime and fine charcoal. The lime is apparently applied to cause a more rapid decomposition of the saw-dust, and to neutralize any acid it may contain; but it will be seen, in the following article on urine, that when in the soil it plays an important part in promoting vegetation. I would advise our farmers to put the above-named compost into their barn-yards and hog-sties, where it will not only undergo a rapid change, but the charcoal will absorb and retain all the ammonia now lost by evaporation. If a portion of the saw-dust should be the product of pitch-pine timber, no bitumen need be added; but when this can not be obtained, a small quantity of crushed rosin or pitch may be added to the compost heap.

I shall proceed to bring to your notice the urine thrown away in our cities. In the first place, I will show you the component parts of vegetable matter, and of carbonate of ammonia. By comparing the two, you will readily appreciate the importance of saving every drop of urine from your own families and barn-yards, as well as collecting it from our cities. In this explanation I must necessarily use scientific terms, as we have no common terms in our language by which to express their meaning. By comparison, however, the terms will show you that the component parts of vegetation and of carbonate of ammonia are the same, excepting about eight per cent. of the solid portion of vegetation.

The average elementary portion of vegetables consists of about 480 parts of carbon, 65 of hydrogen, 369 of oxygen, 40 of nitrogen, and about 46 of solid matter, in 1000 parts.

Carbonate of ammonia contains, in 100 parts, about 50 parts carbonic gas, 30 parts of ammonia, 20 parts of water. Carbonic gas contains carbon and oxygen; the ammonia contains hydrogen and nitrogen. Thus we perceive that carbonate of ammonia contains within itself the elementary portions of all vegetable products. There is no other known substance containing within itself all these elements, and hence is derived its wonderful fertilizing power.

Stale urine contains a large portion of ammonia and of ammoniacal salts, which are mostly lost by evaporation, as will continue to be the case, unless some material be combined with it capable of retaining the ammonia. Charcoal is undoubtedly the best substance for this purpose, as it will take up and retain within its pores, more ammonia than any other known material.

Charcoal is a valuable product in the soil, independent of its retaining ammonia when presented to it by human agency. "It absorbs in large quantity into its pores, the gaseous substances and vapours which exist in the atmosphere." It separates from water any decayed animal matters or colouring substances which it may hold in solution. It

also holds moisture with a tenacity greater than any other known material.

Our farmers may tell me they are well aware of the value of urine, but may ask how are they to collect it in sufficient quantity. I have thought of this difficulty, and believe it may be overcome by a little perseverance. There is a small shed behind the city hall, where many thousands of gallons might be annually collected. Let some farmer get the privilege from the corporation, of putting down a large receiver there under ground, filling it half full of fine charcoal, so as to take off the powerful effluvia—now so offensive—on condition of its being emptied twice a year, spring and fall. Let the same system be pursued at all the large eating houses and taverns. Instead of such places being as now, injurious to the health of the neighbourhood, they would become perfectly sweet and inocuous. The difficulty would be greater in families; yet if it can be proved that those who inhabit houses can derive an annual income from attending to it, as well as take off all bad smells from every square in the city, I should presume the double inducement would cause the system to be generally adopted. The greater portion of the urine of families is daily thrown into the privies. If every family would have theirs emptied once a year, and when emptied, put into the vault two barrels of charcoal, and add one barrel of charcoal every month afterward, at the end of each year they would have about forty bushels of poudrette and urate, of a far better quality than any now sold, worth twenty-five cents per bushel, to the person who may take it away, exclusive of the expense of removal. Thus every family might make a clear income of eight dollars per annum, beyond the cost of the charcoal, and keep the whole city free from the abominable excrementitious effluvium now so pernicious to the health and so obnoxious to the olfactories of our citizens.

It will be seen that carbon and oxygen form eight and a half parts in every ten of vegetable matter, and it is more than probable that carbonic gas supplies the whole of it. How amply has Infinite Wisdom provided for this immense demand! Can the geologist measure the carbonate of lime and other carbonates laid up by Creative Wisdom in our globe? Can the physiologist count the weight of carbonic gas daily exhaled by the animal creation? Can the philosopher form a distant conception of the immense supply hourly liberated by the rapid and slow decomposition ever progressing on our earth's surface? If man has not the power to measure or count the supply, he has *given to him the power to collect and apply it* for his individual and general benefit.

It was my intention to have explained, in this essay, the effect of lime in promoting vegetation when mixed in soils, as hinted when treating of its operation on saw-dust; but as this article is already too extended, I shall defer it to some future opportunity.

Wm. Partridge.

Disease in the Pear tree.

For many years past, the pear tree has been found to be subject to a peculiar malady, which shows itself during midsummer, by the sudden withering of the leaves and fruit, and the discolouration of the bark of one or more of the limbs, followed by the immediate death of the part affected. In June, 1816, the Hon. John Lowell, of Roxbury, discovered a minute insect in one of the affected limbs of a pear tree; afterwards he repeatedly detected the same insects in blasted limbs, and his discoveries have been confirmed by Mr. Henry Wheeler and the late Dr. Oliver Fiske, of Worcester. Mr. Lowell submitted the limb and the insect contained therein, to the examination of Professor Peck, who gave an account and figure of the latter, in the fourth volume of the "Massachusetts Agricultural Repository and Journal." From this account, and from the subsequent communication by Mr. Lowell, in the fifth volume of the "New England Farmer," it appears that the grub or larva of the insect, eats its way inward, through the alburnum or sap-wood, into the hardest part of the wood, beginning at the root of a bud, behind which, probably the egg was deposited, following the course of the eye of the bud towards the pith, around which it passes, and part of which it also consumes; thus forming, after penetrating through the alburnum, a circular burrow or passage in the heart-wood, contiguous to the pith which it surrounds. By this means, the central vessels, or those which convey the ascending sap, are divided, and the circulation is cut off. This takes place when the increasing heat of the atmosphere, producing a greater transpiration from the leaves, renders a large and continued flow of sap necessary to supply the evaporation. For the want of this, or from some other unexplained cause, the whole of the limb above the seat of the insect's operations suddenly withers, and perishes during the intense heat of midsummer. The larva is changed to a pupa, and subsequently to a little beetle, in the bottom of its burrow, makes its escape from the tree in the latter part of June, or beginning of July, and probably deposits its eggs

before August has passed. This little beetle, which is only one-tenth of an inch in length, was named *Scolytus Pyri*, the pear tree Scolytus, by Professor Peck; it is of a deep brown colour, with the antennæ and legs rather paler, or of the colour of iron rust. The thorax is short, very convex, rounded and rough before; the wing covers are minutely punctured in rows, and slope off very suddenly and obliquely behind; the shanks are widened and flattened towards the end, beset with a few little teeth externally, and end with a short hook; and the joints of the feet are slender and entire. It is evident that this insect cannot be retained in the genus *Scolytus*, as defined by modern naturalists; but the condition of my specimens will not enable me to determine with certainty to which of the modern genera they are to be referred. The minuteness of the insect, the difficulty attending the discovery of the precise seat of its operations before it has left the tree, and the small size of the aperture through which it makes its escape from the limb, are probably the reasons why it has eluded the researches of those persons who disbelieve in its existence as the cause of the blasting of the limbs of the pear tree. It is to be sought at or near the lowest part of the diseased limbs, and in the immediate vicinity of the buds situated about that part. The remedy suggested by Mr. Lowell and Professor Peck, to prevent other limbs and trees from being subsequently attacked in the same way, consists in cutting off the blasted limb *below* the seat of injury, and burning it *before* the *perfect* insect has made its escape. It will therefore be necessary, carefully to examine our pear trees daily, during the month of June, and watch for the first indication of disease, or the remedy may be applied too late to prevent the dispersion of the insects among other trees.—*Harris's Insects of N. England.*

Dr. Harris was instructed to report on the Insects of Massachusetts injurious to Vegetation, and the method he has exhibited in this difficult task, can only be appreciated by those who are somewhat acquainted with the habits of the insect tribes.—*Hovey's Magazine of Horticulture.*

Treatment of Cacti.—The chief point in the managing of these plants, is to allow them an alternate period of growth and rest. They should be grown in a mixture of lime, rubbish and loam, with a little cow dung, and in well drained pots. In summer they should be fully exposed to the sun, and well watered: but from October to March, they should be kept perfectly dry.—*Gardener's Chronicle.*

For the Farmers' Cabinet.

Dana's Muck Manual, and Ruffin's Essay.

I have been so well pleased with the good sense running through the following article, which I find in the July No. of the North American Review, that I am induced to forward it to the Cabinet. Agriculture is often said to be a *matter of fact* operation, and *book farming* is much laughed at. So it may well be, when theory is made entirely to supersede actual experiment, and is persisted in, when *facts* contradict it. But I have long been of the mind, that the farmer who looks into the writings of those who theorise and speculate upon the different modes of operation that are brought into play, even in such simple things as planting potatoes and cutting wheat, will not be likely to raise any fewer of the one, nor to make any more mistakes in gathering the other, than his neighbour who eschews all instruction, and takes *statu quo* for his motto. I am well satisfied from my own experience, and my own errors, that on the subject of manures—I have more particular reference to their use—there is abundant room for farmers to be instructed. To buy manure, runs away with a great deal of our cash: and if bought, what is the best kind! To make it—to husband it, and to use it to the best advantage, are considerations of the first importance. We may toil early and late, but we can hardly give attention to a subject on our farms of more serious importance than that of manures. And this is my excuse for troubling you with this article.

A. N.

Mount Holly, N. J.

"Great improvements have been made of late years, in the application of science to the arts, and for other useful purposes, and in no department have the beneficial results of such an application been more manifest than in that of agriculture. People are willing to undergo the labour of making themselves acquainted with new views and facts promulgated by scientific men, and to incur the expense of reducing them to experiment, when the advantages from a successful trial will be tangible, and the results immediate. Hence comes the eagerness with which Dr. Liebig's recent publications have been received in this country, as evinced by the rapid sale of large editions. Not all the persons who buy them are capable of judging of their scientific merits, nor is it necessary that they should be. A practical test is at hand, which any one can apply. A trial soon determines the worth of the reputed discovery, or novel application of

principles formerly known, and if the expected results follow, it matters not if the reasoning be unsound, and the *data*, which form the premises, be hastily put together and insufficient. The inquirer may have hit upon the truth by accident.

"It is a good proof, therefore, of the value of such works, that the sale of them is continued and extensive. Tried by this rule, the two publications before us must possess considerable merit. Dr. Dana's Manual has passed to a second edition, and the trustees of the 'Massachusetts Society for promoting Agriculture,' have purchased one hundred copies of it for immediate distribution. Mr. Ruffin's Essay, an octavo of three hundred closely printed pages, has reached the third edition. These facts afford a strong presumption in favour of the two books; for they are purchased, of course, only by practical men, who have found it to their advantage to apply the principles contained in them to the details of agriculture. 'In the few years,' says Mr. Ruffin, 'which have passed since the issue of the preceding edition, it is believed that the use of marl and lime in lower Virginia, has been extended over thrice as much land as had been previously thus improved; and the previous clear income of the farmers thus fertilizing their lands, has been already increased'—to an amount that we dare not mention, lest we should be suspected of practising on the credulity of our readers."

For the Farmers' Cabinet.

Poudrette as a Manure for Wheat and Rye.

Mr. Editor,—Perhaps the readers of the Cabinet may desire to know the result of the application of *Poudrette* as a fertilizer on wheat and rye, when applied in the fall at sowing. If so, the following statements, made by practical farmers, who have used it for several years in large quantities; and on wheat in *comparison* with other manures, may be interesting to them.

Mr. Lemuel Soper, of Huntington, L. I., says: "I also used poudrette on wheat, at the rate of forty, sixty, and even seventy bushels to the acre. Where I used forty bushels to the acre, I got *as good wheat* as where I used forty wagon loads of barn-yard manure, and *equally as good* as where I used sixty or seventy bushels of poudrette to the acre."

Mr. Edward Condict, of Morristown, N. J., says, that "early in October last, I used the poudrette on a loamy soil, somewhat inclining to clay, which I had prepared for wheat. There was no difference in the soil, nor in its preparation, except that on about one-fourth part of it, after the wheat was sown, about twenty bushels of the poudrette to the acre, were also sown, broadcast; and the result is, that on harvesting that part where the poudrette was put, is much the heaviest grain, and but very litle injured with the rust or mildew, while the other part of the field is considerably injured."

Mr. Samuel Fleet, of Hastings, Westchester county, says that he "finds it very efficient, if applied when seeding down. The seed *took* much better, in the same field, where poudrette was applied at seeding, than where other manure was used, the whole being put down at the same time."

Mr. Wm. Wickham Mills, of Smithtown, L. I., says that "where the poudrette was used, the wheat came in well. It stood the winter well, and the berry was fair; but where bone was used, about the same cost to the acre, in the same field, it was winter-killed, and very much shrunk, and the produce was only about one half the number of bushels to the acre."

Captain R. B. Coleman, of New York, used 125 bushels of poudrette on his farm, near Poughkeepsie, in the fall of 1839, on wheat, at the rate of 25 bushels to the acre. His object was to lay it down to grass, and he desired to ensure good crops. June 5th, 1842, he says, "The ground on which the poudrette was put, can be distinctly marked out, by the luxuriant growth of grass on it being superior to that adjoining."

Numerous other similar statements might be given, but these are selected because made by farmers who have used poudrette in *large* quantities for several years, and the best *evidence* of the estimation in which it is held by those who have used it in the largest quantities for the longest period, is that they have purchased more the present year, than ever before.

The value of poudrette, however, does not rest upon the experiments made in *this* country *alone*, as will be seen by the following extracts from that valuable work—now in course of publication, by Messrs. Carey & Hart, and re-edited by an American gentleman, of much practical skill and extensive observation abroad, as well as a thorough knowledge of the *science* of agriculture—the *Farmer's Encyclopedia*. Professor Johnson, the author, says, p. 778—781:

"My attention, however, will, in this place, be principally confined to fertilizers of an organic nature, and more especially to night-soil. Night-soil has not, in any form, been employed by the farmers of England to the same extent as on the Continent, although it is certainly by far the most pow-

erful of the organic manures, and the most easily rendered applicable by the drill of any of the class.

"Various modes besides those to which I have alluded, have, at different times, been suggested, by which night-soil might be rendered more concentrated and more portable. Simply drying it has been attempted with some success; but though by this means about 70 per cent. of water is driven off, yet, at the same time, a considerable portion of ammoniacal and other gaseous matters are vaporized: thus the manure is impoverished, while the stench of the operation is intolerable. Then, again, it has been mixed with lime, in the way recommended by Davy; but judging by my own experiments, and those of my neighbours, I am fully persuaded that this is not the most economical way of using night-soil. The lime certainly dissolves, and partially decomposes it, but the fertilizing effect of a given weight of night-soil mixed with lime, is clearly not so great as when a similar weight of it is used either by itself, or mixed with some merely drying odour-absorbing substance. There are several preparations of this kind made in large quantities in London, such as those of Mr. Clarke, and of Mr. Lance, the author of the *Golden Farmer*, all of which, I believe, are excellent manures; but I have not had an opportunity of examining any of their manufactures, except those of the London Manure Company, and of the Messrs. Poittevin. The preparation of these gentlemen, is the same as that so successfully carried into effect by M. Payen, at Paris: it combines, and successfully too, the great object of driving off the water of urine and night-soil by a gentle heat, after all its gaseous matters have been absorbed, by mixing with it a portion of newly prepared carbon, in the finest possible state of division, than which no known substance has such great powers of absorption of all gaseous matters, like those which abound in and impart the disagreeable odour to night-soil. These purifying powers of charcoal, have been long known: the medical man applies it in putrescent cases, the housewife rubs it powdered over her tainted meat, and the sailor chars the inside of his water-casks for a similar purpose. The presence of the carbon in the manure thus prepared, is valuable in two ways; gradually it combines with the oxygen of the atmosphere, forming, in the state of carbonic acid gas, the food of plants; and, at the same time, all the gaseous matters of putrefaction with which it is saturated, are thus preserved, stored up, as it were, for the service of the roots of the cultivator's crops; nothing is lost, the emission of the gases from the slowly dissolving charcoal, being so gradual as to be almost, if not entirely, imperceptible to the senses."

From this, and other recent valuable publications for the practical farmer, it will be found that *poudrette*, or manure prepared from the contents of sinks, has been long used in Europe with great success; and that it is considered one of the *most valuable* fertilizers in use there. Whereas, in this country, it is only just beginning to be appreciated. It is safe, however, to predict that ten years, and even less, will effect an entire revolution in this matter, amongst our farmers—who are not slow to understand their own interest; especially when they see others obtaining better crops with less labour and at less expense, by the use of *concentrated* manures:—and the farmers of Pennsylvania, may now obtain poudrette of the very best quality, prepared in Philadelphia, and thus save the expense of transportation from New York, as heretofore.

Respectfully yours, D. K. Minor.

Philadelphia, Sept. 1st, 1843.

The Westborough milk company have had the enterprise to try a wholesome experiment of sending milk on the rail-road, thirty miles to Boston, with entire success. The transmission of butter, which is also a part of their system, has been tried by others, and was attended with no risk. The milk thus transmitted in cans of any size desired, in a car of eight wheels, with scarcely any shaking, may be kept perfectly sweet. Of course it can be sold in that state at a good profit, for a less price than it is possible to sell milk produced near Boston. This is only one of the hundreds of experiments yet to be tried by our farmers and others near the rail-road. This company send around their milk by carts, to all parts of the city. They have a depot also for the sale of milk and butter in any quantity, in Boylston street, where any direction may be given or orders left. They commenced the first of April, by selling 28 gallons a day. They now sell over 400 gallons a day.—*Exchange paper.*

Horses should never stand long on a dry plank floor. Their fore feet, particularly, should rest on something more pliable. Some who object to loam and to tan bark, keep a trough of water and require the horse to stand in it for hours. By travelling fast on hard roads, a fever is created in the fore feet, and road horses are ten times more subject to it than farm horses. When a horse has travelled all day on a hard road, it is cruel to make him stand all night on a hard floor.—*Mass. Ploughman.*

For the Farmers' Cabinet.

St. Domingo.

Mr. Editor,—The present condition of the island of St. Domingo, or Hayti, presents an interesting theme for philanthropic reflection. Its history for the next few years, will go far to determine whether those of the African race, when left to themselves, are capable of establishing and carrying on a government founded on justice and equality. Hitherto, the failure there has been charged to the demagogueism of their rulers. The voice of the people has overthrown these, and present prospects indicate the foundation of institutions analogous to our own.

Having visited a number of the Haytian ports the present season, and some time subsequent to Boyer's fall, it has occurred to me, that a brief reference to my personal observations, although necessarily superficial, from my connection with a cruizing ship, might not be without interest to some of your readers.

Regarding agriculture as the fountain head of national prosperity, my attention was first directed to its condition on the island. It required but the slightest view to satisfy me, that this important interest had for many years, been constantly retrograde. The immense sugar estates, which under the French domination, supplied more sugar than most of the West India islands together, now only furnish sufficient *treacle* for the consumption of the inhabitants. The expensive and perfect appliances for the manufacture of the cane, are no longer in use. The number of coffee trees has greatly diminished, and now 50,000,000 pounds of the berry only, are sent to market. Mahogany and lignum vitæ, requiring no human aid, still grow there, and together with coffee and a few hides, constitute well nigh their sole products. Cotton might be raised with facility, but it is entirely neglected, even for home use. The vicinities of their most populous towns are meagerly cultivated with such vegetables and grasses as find a ready market: the inhabitants, to all appearances, preferring indolence and a banana, to all the luxuries that a little industry would readily afford them. Immense tracts of the most fertile land, including sugar plantations, with all their costly apparatus, can be bought for a mere song.

I am not prepared to charge this melancholy state of affairs entirely to the innate indolence of the African race, although there can be little doubt that Anglo-Saxons would have managed things better. The policy of rulers hitherto, has been directly opposed to any thing like improvement. Placing no reliance upon the affections of the people, the late President has, in order to maintain his authority, appropriated the treasure and industry of the nation to the support of an immense standing army. This army has for many years, been so excessive, as to withdraw from the pursuits of agriculture, all capable of bearing arms. The cultivation of the soil has thus been left to the aged, and to women and children.

The absence of the ordinary comforts of life, has at length begotten an indifference to them, and now that the large military force is disbanded, the late soldier promises to make any thing else than a useful citizen. The views of those who now direct public opinion, are certainly liberal and patriotic. Men will, most probably, be placed at the head of government, who will exercise a sound judgment in correcting former errors. Their success remains to be seen.

A general feeling exists to encourage emigration. The island is sparsely populated; nothing would contribute more to its speedy regeneration, than an influx of a few hundred thousand of the proper kind of emigrants. Whether the free coloured population of our country would do them any good, is doubtful; but as far as those who wish to emigrate are themselves concerned, I am free to confess my honest conviction, that they would be infinitely better off there, than seeking an asylum on the pestiferous shores of Africa. The soil is more fertile and the climate more healthy. They would enjoy greater facilities in amassing property, and the government will probably be strong enough to protect their rights.

J. A. L.

U. S. Ship ——, Aug. 17th, 1843.

Ventilation in the Cheese room.

Mr. Livesey, in the Preston Chronicle, contends strongly for a plentiful supply of pure air where cheese is kept. He says full one half of the cheese, last summer, was very much faded and strong flavoured, and had to be sold at a reduced price; in many instances, so much as 10 per cent. below the price of a good article. Although there are other causes which produce these effects, I have no doubt the chief cause was keeping them in close, small, confined rooms. I scarcely ever go into a cheese room, but I find both the door and window closed; and when these rooms are filled with cheese, the air is so bad and polluted, as almost to be suffocating. My first effort is, generally, to get the window open; but in this I am often frustrated, for I find it either without any opening, or nailed up; and in many cases

the cheese are crammed into a small room, without window or any means of ventilation whatever. Cheese being *animal matter*, can not have too much air. I have noticed for some time, that those dairies that have been kept in a large well-aired room, have been quite sound; and those kept in a close, sickly room, were either faded or very bad in the flavor. Though cheese should not be kept in too high a temperature, yet they will bear the summer heat tolerably well, provided they have a constant supply of good air. There is no objection to a little artificial heat in winter, from a stove or a fire, but this should always be accompanied with a supply of pure air. The difficulty to contend with is two-fold: first, the want, in many farm houses, of a suitable cheese room; and, secondly, the prejudices of the dairymaids. They have a long cherished idea in favour of closed doors, and closed windows, and dark rooms. To prevent flies, they sometimes say, is the reason for keeping the room dark and close; but this is the best plan for increasing them, by producing putrid matter in the cheese. And as for flies, a pennyworth of quassia chips, boiled in a pint of water, well sweetened, and put on plates, will kill thousands directly. As I have this week seen several lots of new cheese, in close confined rooms, which, if they are kept for any length of time, are sure to rot, I am the more anxious to warn the cheese-makers in time, now that hot weather is approaching, to open the doors and windows of their cheese rooms; and, in cases where there are no openings, either to set their husbands or the joiners at work, immediately, to make them.—*American Agriculturist.*

From the New England Farmer.

Reclaiming Meadow lands.

Gentlemen,—I have made several experiments in improving wet meadow and peat lands, which I will, as briefly as possible, state to you.

On land which admits of ploughing, I have planted potatoes on coarse stable manure; after removing the crop, I have sowed winter rye and herds and red-top seed as late as November, and they have always grown well and given good crops. After a few years the grass will degenerate, and I have found unleached wood ashes the best application to invigorate the soil.

I have spread gravel and the accumulations under an old barn floor, on a wet meadow, and sown grass seed, and the crop has been very heavy.

In 1839, I ploughed forty poles of peat meadow, and planted potatoes on coarse stable manure. I harvested in the fall, sixty bushels of excellent potatoes. The next spring I again ploughed, and applied a compost of fifteen bushels of bone manure and three cart-loads of loam: on this I raised a large crop of sugar beets and ruta-baga; one of the former, weighing with the tops, seventeen pounds, and one of the latter, twenty-five pounds. The ground appeared like a rich bed of compost, and I carted from it ten cords, which I spread upon upland grass. In the fall, one cord of horse manure was ploughed in, and winter rye and grass seed sown. In July, 1841, eight bushels of rye were reaped, and soon after, a good crop of grass. In August, of the same year, a second crop of grass was cut on this piece. This year, the first crop of hay was fifty hundred to the acre, and the second twenty.

I have drained four other pieces, which were so miry that oxen could not travel over them. The peat for fuel, fully pays the expense of ditching. The annual crop before my improvement, was not worth a shilling per acre: it was buckthorn and low bushes. This meadow has been pared with a topping-knife to the depth of three and four inches, according to the depth of the wild grass and roots, then cut into squares of fifteen inches, and inverted. Coarse stable manure has been wheeled on, potatoes dropped and covered with the loosest sods. Little labour is required in hoeing. The crops of potatoes have been good in quantity, and excellent in quality. Till this year, when a part of the meadow was flooded by the heavy rains in June, the crop has been two hundred bushels to the acre. Cabbages and beets have also done well. After securing the crop of potatoes, I have taken off the loose toppings and used them for compost. The quantity removed is not far from sixty cords to the acre. The toughest and most rooty sods I have burned on the meadow, and spread the ashes, but the ashes so applied, have not equalled my expectations. After removing the sods, the surface was levelled with rakes, and winter rye and grass seed sown. This was on the sixteenth of November. Early in the spring, I spread on the meadow woollen waste, from a carpet factory, and on a part of it, a compost of hen manure and loam. The latter produced a most luxuriant growth. The rye was partly winter-killed, but what survived was rank and heavy. After reaping the rye, more than thirty hundred to the acre, of grass and stubble was mowed, and another crop might have been made, but I preferred to feed it off.

The present season I have treated two parcels in the same manner, except that I have sown foul meadow with the herds grass and red-top, and I have not sown rye, for I find that ordinarily the grass will be forward enough to mow the summer after sowing in the fall. I had doubts of the expediency of sowing so late as November, but my success has encouraged me to repeat the experiment. I have a compost of loam and stable manure, which I intend to spread on my reclaimed meadows. I consider them the most profitable land for grass, and the toppings removed, afford a rich contribution to the barn-yard, pig-pen, and compost heap.

The quantity of land on which I have made experiments, exceeds three acres.

Respectfully submitted,

DANIEL P. KING.

Danvers, Mass., Nov. 1st, 1842.

Charcoal.

DURING the past year, various experiments have been in progress to ascertain what effects would be produced upon plants by potting, or striking them, from cuttings, in charcoal; or by mixing it in various proportions in the soil in which they are to be grown. From what has been published in Liebig's *Organic Chemistry*, and elsewhere, I had been led to expect some very decided results; but after varying the experiments in many different ways, nothing has happened which proves charcoal to be useful as a chemical agent in the growth of plants. When pounded and used by itself, it is very apt to get too dry, and then runs together and sets very hard. Some orchidaceous plants, gloxinias and Cacti were potted in it, but they did not succeed, evidently from causes above mentioned. When mixed with soil in the proportion of two-thirds of charcoal to one-third of soil, and also in smaller quantities, such plants as oranges, ipomæà scàbra, gesneras and Cacti, grew very well in the mixture, but not better than others which were treated in the common way. Cuttings of the common Caper, *F*icus elàstica, *E*uphorb*ia* Jacquin*æflorà*, Ipomæ*à*, and various other kinds, were planted both in pounded charcoal, and in different proportions mixed with sand; but the results were not more favourable to the charcoal than to the common sand usually employed for that purpose. The caper rooted freely in both ways, but the others did best in the sand. Many cuttings, when planted in pine charcoal, or even when that formed a principal part of the mixture, threw off their leaves in a short time and rotted at the base. From what has come under my observation during these experiments, I would not recommend this substance to be used by itself for the growth of plants or for striking cuttings; and if it does produce any good chemical effects when mixed with the soil, these will probably depend in a great degree upon the constitution of the soil, in the same way as lime and chalk are only good manures for certain lands. But it is very possible that these effects are only mechanical, tending to keep the ground open in the manner which renders ashes so very beneficial to stiff soils.—*London Horticultural Society.*

From the S. C. Planter.

Large yield of Potatoes.

I HAVE delayed sending an account of my last year's potatoe crop as I promised, until the account kept by the boys who did the work, is lost, so that I am unable to arrive at the cost. The quantity of ground was 32 square rods of old and poor land, manured with stable manure and broke deep, then furrowed off with a shovel plough, about 21 inches apart, the furrows nearly filled with barn-yard or long manure, the potatoes cut and dropped; the pieces about nine or ten inches apart in the furrows on the manure, then slightly covered with a hoe, leaving the surface smooth. The whole was then covered with leaves and trash from the woods, three or four inches thick, then some heavier litter, such as drifted brush from low grounds, sedge, cornstalks and weeds, thrown on to prevent the wind taking off the leaves.

Here ended the tending, except where the trash was not thick enough to prevent weeds springing up, they were pulled out by hand. The planting was done in the latter part of the Third month last, the product was 121½ bushels, being a fraction over 3¾ bushels to the square rod, or 607½ to the acre. The planting was from the stock I have had for several years past, and the product quite as fine as I ever saw from the mountains. THOMAS T. HUNT.

Springfield, Guilford co., N. C.,
Third mo. 1st, 1843.

ANY deviation from the most exact and scrupulous sincerity, is repugnant to the good faith that ought to prevail in contracts. Any dissimulation concerning the subject-matter of the contract, and *what the opposite party has an interest in knowing*, is contrary to that good faith.—*Pothier.*

POPULAR ERRORS.—That green or unseasoned wood is as good for making fires, as dry or seasoned wood.

That hot bread, or bread less than twenty-four hours old, is wholesome.

Cultivation of Madder, *Rubia Tinctorum.*

A much respected friend at Everettville, Va., inquires if "Madder is cultivated in Pennsylvania, and to what extent? How is it prepared when brought to market? Could the article be sold in Philadelphia in its rough state, and what would be its probable price?"

We are ignorant of attempts to cultivate the article in this State at present: it has never succeeded here to any considerable extent. Some six or eight years ago, there was a good deal said about its cultivation in some of the Western States—in Ohio, Kentucky, and Tennessee particularly; and attempts were made to introduce it: how well those attempts succeeded, we are not advised.

Dyers' madder is a native of the South of Europe, and is largely cultivated in France, Germany and Holland, whence the United States market is principally supplied. It is of course brought here in a prepared state, the root being reduced to a coarse powder. It comes in casks containing several hundred weight, and varies in price, as other articles do, according to the demand, quality, and scarcity: say from ten to twenty, or twenty-five cents per pound. It is said to contain five distinct colouring substances: a red, a purple, an orange, a yellow, and a brown: but according to M. Decaisne, the yellow colouring matter only is procured from the fresh root; and "it is under the influence of atmospheric air, that this changes to red." The quality, we suppose, would be more accurately ascertained, when reduced, than when in the root. We would refer our friend, and others also, who would have information on the subject, to page 280, of the Cabinet, vol. 1, where they will find an intelligent letter. Meanwhile, we give an extract below, from a communication furnished by William Partridge, Esq., to the American Agriculturist. We will recur to the subject again, in our next number.—Ed.

The great depression in every kind of agricultural produce, makes it the duty of patriotic citizens, to point out any new vegetable products wanting in the practical arts. Of these there are some five or six, hitherto imported from foreign countries, that can just as well be grown by our farmers as by foreigners. These are madder, indigo, Sicilian sumach, *rhus coriaria*, Italian sumach, *rhus cotinus*, weld *residæ lutiola*, and woad.

I undertook to bring these articles to the attention of our agriculturists some fifteen years since, but the then high price of produce paralized the effort.

I shall in this article treat of the cultivation of madder. The consumption of it is very large, and would require many thousands of acres to supply the home market. I believe the cultivation of madder has been successfully prosecuted on a small scale, in the neighbourhood of Utica, State of New York, for some years past. About the year 1816, I bought some dried roots in the market of Cynthiana, Kentucky, that I found of very good quality. I have tested some roots brought from South America, where, I am informed, it grows wild, and it proved superior to any European madder I ever used. Mrs. Madison made a report to the Philosophical Society of Philadelphia, many years since, on madder raised under her direction, and the report was accompanied with a sample of cotton dyed an Adrianople red, that has never been exceeded in colour by any European dyer.

D. Ambourney informs us, that the roots taken from the ground and washed, will, by using four pounds for one, produce all the effect of the best prepared. This fact is highly important to manufacturers, as it points out to them an easy and cheap way of obtaining the article for their own consumption, at less than half the price paid by them for the foreign article.

These facts will prove incontestably, that our soil and climate are admirably adapted for the cultivation of madder. The only impediment to our success lies in the fact, that it requires from two to three years to realize a crop, and our farmers are ever impatient for quick returns. I shall commence by describing the mode of culture, and then give the process of drying and grinding for distant markets.

Preparation for the crop.—It will be necessary to plough the land deeply for madder, before the winter, into high ridges, in order that it may be exposed to the action and influence of the frosts and the atmosphere. Early in the spring, these ridges should be well harrowed down by a heavy long-tined harrow, and then ploughed again in the contrary direction to a good depth; and after this, when the land is not perfectly clean from weeds, or not rendered sufficiently fine and mellow, another ploughing and another harrowing should be given. In the last operation, the ground should always be left in as level and even a state as possible. It is then ready for the reception of the plants.

Sowing and planting.—The sets or plants may then be obtained either by sowing the seeds upon a bed of earth which is rich, and made perfectly fine by digging and raking in the spring, and then lightly covering it, or from offsets or suckers from the old plants. In the first method, on the plants appearing, they should be made perfectly clean by weeding, and be set out at the distance of three inches in the beds by the hoe; in this way, by keeping the ground quite clean and well stirred about the plants, they will be ready to set out in the second autumn, though it will be mostly better to defer the business

till spring. It requires about thirty thousand plants for setting an acre of land. The most suitable time for taking the sets, is shown by the plants having attained the height of ten or twelve inches from the ground, and the suckers having thrown out fibrous roots from their bottoms. This may be seen by drawing up a few of the plants, and usually about the latter end of May or beginning of June. Besides, it is necessary that the sets shall have formed root-fibres at the bottoms, before they are removed, as where that is not the case, they never succeed well.

The land being prepared as directed, and the plants provided, a sufficient number of labourers are to be employed, that the work may be performed as expeditiously as possible. In taking off the sets, much care is necessary not to injure them. The number of plants that can be set in a short time, should be taken up at once. They should be prepared, by having a third part of their tops cut off. A sort of thin batter should be made, by mixing good vegetable mould and water well together, and as madder roots contain a large portion of free potash, I would recommend an addition of half a pound of potash to the batter used for the shoots, for every five pounds of fine mould; and this first dissolved in the water before mixing with the mould. Into this batter the roots and the sets should be well dipped, before they are placed in the earth, as by this means the necessity of watering the plants afterward is prevented. This work is executed by a person before the planting commences. Two others are employed afterward in distributing the plants, so as to be convenient for putting them into the ground.

These sets, after the land has been formed into beds, five feet in breadth, with two feet between each for intervals, are put in by means of a line and a dibble, beginning at a distance of six inches from the outside, and setting a row of plants at a distance of five, six, or more inches from each other; then removing the line two feet farther on them, and putting in another row, and so on, till the bed is finished. In this way each bed contains three rows of plants, at two feet distance each.

After cultivation.—As some of the plants are liable to die soon after the work has been performed, it is necessary, in the course of two or three weeks, to look over the ground, and put fresh vigorous plants in the places where the others have been destroyed.

It is of the greatest consequence to the growth, that it be kept perfectly clean from weeds, and that the mould be occasionally stirred about the shoots of the plants.

WM. PARTRIDGE.

Acid in Wood—Its effects on Salt and Butter.

IT has been frequently remarked by those who are in the habit of packing butter, that it kept best put down in stone; the next best, is oak or white-ash firkins; the wood of which had been boiled for several hours previous to working; and the butter packed in firkins of unprepared wood, frequently acquired a strong and disagreeable flavour, which seriously injured it. The reason of this has not been generally understood. Mr. Moir, of Scotland, has been instituting a series of experiments on the subject, which appear to have thrown some light on the matter. He found that most kinds of wood contained considerable quantities of pyroligneous acid, which decomposes the salt with which it comes in contact. The Linden or Basswood, was the only wood he found entirely free, but the other kinds he experimented upon, were easily freed from the acid by boiling three or four hours, well pressed under water. It is evident that firkins made of staves, prepared in this way, would be decidedly improved, and as the preservation of butter in a sweet and pure state is an important matter to the dairyman, we think much would be gained by a proper attention to the vessels in which it is packed.—*Saturday Courier.*

RICE FOR PIGS.—My friend and I, purchased from the Government stores, several tons of damaged rice, at a cheap rate, and with this we fattened a lot of pigs; and such pork I never saw before nor since. The fat, instead of being loose and porous, as it frequently is, was as solid as the lean, and the flavour of the meat was altogether superior. The way in which the rice was prepared was this. My copper held 40 gallons. In the afternoon this was filled, or nearly so, with water; as soon as the water boiled, the fire was raked out, and two pails full of rice shot in; the whole was then closely covered down, and left till thé morning. On the following day the copper was emptied of its contents, which consisted of a thick jelly, which could only be taken out with a shovel. With this the pigs were fed, and the effect was what I have stated above.—*London Farmer's Magazine.*

IT is not sufficient that we avoid what is wrong—we should also practice what is right. The former is a negative virtue, the latter positive.

For the Farmers' Cabinet.

Seedling Fruit Trees.

Your correspondent Poma, in the last number of the Cabinet, has introduced a subject of very great moment to every lover of good fruit. It is well known that some of the best varieties of fruit that are to be obtained at our nurseries—the apple in particular,—have, in common language, seen their best days: some indeed, have quite run out, while others are decidedly on the decline. That this inconvenience should, if possible, be remedied, we are all ready to acknowledge; and I have not seen any plausible mode suggested, but that of Poma: namely, to seek new varieties from seedlings. We are all interested in persuading the nurseryman,—the horticulturist, and the farmer, to turn their attention to the subject, that so, by their care and good judgment, we may continue to have a succession of fine fruit—especially of the apple, the peach, the plum, and the pear.

Maund is high authority among the living horticulturists of Great Britain; and I find some remarks of his very appropriate to our subject, in the first part of the Auctarium of the Botanic Garden. "The decay of the best varieties of fruit-bearing trees," says he, "which have been distributed through the country by grafts, is a circumstance of great importance. There is no mode of preserving them; and no resource, except that of raising new varieties from seeds. Where a species has been ameliorated by culture, the seeds it affords, other circumstances being similar, produce more vigorous and perfect plants; and in this way the great improvements in the production of our fields and gardens, seem to have been occasioned.

"Wheat, in its indigenous state, as a natural production of the soil, appears to have been a very small grass; and the case is still more remarkable with the apple and plum. The crab seems to have been the parent of all our apples. And two fruits can scarcely be conceived more different, in size, colour, and appearance, than the wild plum and the rich magnum bonum.

"The seeds of plants exalted by cultivation, always furnish large and improved varieties; but the flavour, and even the colour of the fruit, seem to be a matter of accident. Thus a hundred seeds of the golden pippin, will all produce fine large-leaved apple-trees, bearing fruit of a considerable size; but the tastes and colours of the apples from each will be different, and none will be the same in kind as those of the pippin itself. Some will be sweet, some sour, some bitter, some mawkish, some aromatic; some yellow, some green, some red, and some streaked. All the apples will, however, be much more perfect than those from the seeds of a crab, which produce trees all of the same kind, and all bearing sour and diminutive fruit.

"The larger and thicker the leaves of a seedling, and the more expanded its blossoms, the more it is likely to produce a good variety of fruit. Short-leaved trees should never be selected; for these approach nearer to the original standard; whereas the other qualities indicate the influence of cultivation.

"Seeds should be chosen from the most highly cultivated varieties, as they give the most vigorous produce."

The above extract contains valuable hints, as well as a statement of interesting facts. It requires no more labour to plant and to nurse a good fruit-tree, than an indifferent one: and I was pleased to see the article directing attention to the subject. If our fine apples owe their origin to the *crab*, and the rich magnum bonum and gage, owe theirs to the common wild plum, there is certainly great encouragement to persevere in cultivation, and to endeavour to keep up from seedlings, a supply of the luxuries which our American orchards are capable of supplying us with. It is said the almond even, with its rough and unyielding shell, is the original of the peach; nature having been persuaded, by long cultivation, to clothe the husk of the former, with the beautiful, and soft, and delicious pulp of the latter.

A. R.

Broom Corn is much cultivated, and with success, in some towns on the Connecticut river, in Massachusetts. The amount produced on one acre, varies from eight hundred to one thousand pounds, besides sixty or seventy bushels of seed. The brush is said to be worth four or five cents per pound; in 1837, it was worth twelve and a half cents per pound. The seed on an acre, at thirty-three cents a bushel, is said to be equal to a crop of oats. In Northampton and its vicinity, not less than one thousand three hundred acres are thus cultivated, worth, for the brush and seed, $100,000. The seed usually weighs forty pounds per bushel. The manufacture of brooms in a small town, Hadley, in Massachusetts, is estimated at $160,000; eighty thousand brooms were manufactured by one man in a year. To a limited extent, this culture of the broom corn and its manufacture, might be yet more extensively engaged in with advantage. The process of cultivation is similar to that of maize or Indian corn.—*Berkshire Farmer.*

Improvement of the soil by Irrigation.

We take pleasure in transferring the following article to our pages. We find it in the third part of Johnston's Lectures on Agricultural Chemistry and Geology which a friend has placed in our hands. It treats briefly, but understandingly, of a subject to which we have several times latterly called the attention of our readers; and which, we apprehend, is not sufficiently attended to. Many situations through the country, admit of this mode of enriching the soil, which are yet not appreciated, and their advantages are suffered to remain unused. Irrigation is one of the cheapest and most efficient modes of keeping up and enriching pasture lands. It is also, where it can be practised, the neatest, and as our lecturer observes, the most "refined" of all modes of manuring.—Ed.

IRRIGATION, as it is practised in our climate, is only a more refined method of manuring the soil. In warm climates, where the parched plant would wither and die unless a constant supply of water were artificially afforded to it, irrigation may act beneficially by merely yielding this supply to the growing crops; but in our latitudes only a small part of its beneficial effects can be ascribed to this cause. It is to pasture and meadow lands almost solely, that irrigation is applied by British farmers, and the good effect it produces is to be explained by a reference to various natural causes.

1°. If the water be more or less muddy, bearing with it solid matter which deposits itself in still places, the good effects which follow its diffusion over the soil, may be ascribed to the layer of visible manure which it leaves everywhere behind it. Thus the Nile and the Ganges fertilize the lands over which their annual floods extend, and partly in this way do some of our smaller streams improve the fields over which they either naturally flow or are artificially led.

2°. Or if the water hold in solution, as the liquid manures of the farm-yard do, substances on which plants are known to feed, then to diffuse them over the surface is a simple act of liquid manuring, from which the usual benefits follow. Such is the irrigation which is practised in the neighbourhood of our large towns, where the contents of the common sewers are discharged into the waters which subsequently spread themselves over the fields. In so far also as any streams can be supposed to hold in solution the washings of towns or of higher lands—and there are few which are not more or less impregnated in this manner—so far may their beneficial action, when employed for purposes of irrigation, be ascribed to the same cause.

3°. But spring waters which have run only a short way from their source, are occasionally found to be valuable irrigators. In such cases also, the good effect may be due in whole or in part, to substances held in solution by the water. Thus, in limestone districts, and especially those of the mountain limestone formation—in which copious springs are not unfrequently met with—the water is generally impregnated with much carbonate of lime, which it slowly deposits as it flows away from its source. To irrigate with such water is, in a refined sense, to lime the land, and at the same time to place within the reach of the growing plants, an abundant supply of this substance, in a form in which it can readily enter into their roots.

In other districts, again, the springs contain gypsum and common salt, and sulphate of soda and sulphate of magnesia, and thus are capable of imparting to plants many of those inorganic forms of matter, without which, as we have seen, they cannot exhibit a healthy growth.

4°. Again, it is observed that the good effects of irrigation are produced only by *running water*—coarse grasses and marsh plants springing up when the water is allowed to stagnate. This is explained in part by the fact, that a given quantity of water will soon be deprived of that portion of matter held in solution, of which the plants can readily avail themselves, and that when this is the case it can no longer contribute to their growth in an equal degree.

But there is another virtue in running water, which makes it more wholesome to the living plant. It comes upon the field charged with gaseous matter, with oxygen and nitrogen, and carbonic acid, in proportions very different from those in which these gases are mixed together in the air. To the root, and to the leaf also, it carries these gaseous substances. The oxygen is worked up in aiding the decomposition of decaying vegetable matter. The carbonic acid is absorbed by and feeds the plant. Let the same water remain on the same spot, and its supply of these gaseous substances is soon exhausted. In its state of rest it re-absorbs new portions from the air with comparative slowness. But let it flow along the surface of the field, exposing every moment new particles to the moving air, and it takes in the carbonic acid especially with much rapidity—and as it takes it from the air, almost as readily again gives it up to the leaf or root with which it first comes into contact. This is no doubt one of the more important of the several purposes which we can understand running water to serve when used for irrigation.

But further, if water be allowed to stagnate over the finer grasses, they soon find themselves in circumstances in which it is not consistent with their nature to exhibit a healthy growth. They droop, therefore, and die, and are succeeded by new races, to which the wet land is more congenial.

5°. It is known also, that even running water, if kept flowing without intermission, for too long a period, will injure the pasture. This is because a long immersion in water, induces a decay of vegetable matter in the soil which is unfavourable to the growth of the grasses—producing chemical compounds, which are not naturally formed in those situations in which the grasses delight to grow, and which are unwholesome to them. Although, therefore, the water continues to supply those various kinds of food by which the grasses are benefited, yet it becomes necessary to withdraw it for a time, in order that other injurious consequences may be avoided.

Wheat Crops in Succession.

We take the following account of five extraordinary crops of wheat in succession, from the Southern Cultivator, published at Augusta, Ga.—Ed.

Elkton, Md., Jan. 6th, 1843.

Dear Sir,—I observe in your paper of the 21st ult., a request that I should give you some information respecting five successive crops of wheat grown on a ten acre lot, which formerly belonged to me at this place. The lot was clear of timber as long as I had any knowledge, except two or three black walnut trees. The soil is a light sandy loam mould; it had been in clover and timothy for some years, then put in corn, and it produced 850 bushels of good sound corn, then ploughed the next spring, and 20 bushels of barley sowed, produced 350 bushels. That fall manured over with stable manure, ploughed once, and 20 bushels of good red chaff wheat sowed and harrowed each way. The produce was 422 bushels of wheat, weighing 61 lbs. to the bushel; the second year manured over with stable manure and ploughed once as before, limed and harrowed in, produce 400 bushels. Third year being a very dry season, ploughed a few furrows round the lot and set fire to the stubble and turned it into the earth; then gave it a light coat of stable manure ploughed once, limed and harrowed as before; produce 350 bushels. Fourth year covered over with stable manure, ploughed once and harrowed as before, produce 400 bushels. Fifth year covered over lightly with stable manure, ploughed once, limed and harrowed in as before, produce 300 bushels. I sowed my wheat about the 15th of September, never ploughed but once a year, and harrowed in both ways, changing my seed every year. It was not disturbed by any insect during that time. Some of my neighbours complained of the fly and rust affecting their crops, but mine was not affected with either. I attribute the small crop of the fifth year, to my having seeded one half of the lot with white wheat—the produce of that half was only 100 bushels.

Respectfully your friend,
Adam Whann.

From the Boston Daily Bulletin.

The Beautiful.

"There is but a very minute portion of the creation that we can turn into clothes and food, and gratifications for the body; but the whole creation may be used to minister to the sense of beauty."—*Channing.*

The beautiful! the beautiful!
Where do we find it not?
It is an all-pervading grace,
And lighteth every spot.

It sparkles on the ocean wave,
It glitters in the dew,
We see it in the glorious sky,
And in the flow'ret's hue.

On mountain top, in valley deep,
We find its presence there;
The beautiful! the beautiful!
It liveth everywhere.

The glories of the noontide day,
The still and solemn night,
The changing seasons, all can bring
Their tribute of delight.

There's beauty in the child's first smile,
And in that look of faith—
The Christian's last on earth, before
His eye is closed in death;

And in the beings that we love,
Who have our tend'rest care—
The beautiful! the beautiful!
'Tis sweet to trace it there.

'Twas in the glance that God threw o'er
The young created earth,—
When he proclaim'd it "very good,"
The beautiful had birth.

Then who shall say this world is dull,
And all to sadness given,
While yet there glows on every side
The smile that came from Heaven?

If so much loveliness is sent
To grace our earthly home,
How beautiful! how beautiful!
Will be the world to come!

The Rook, *Corvus frugilegus, Linn.*

To the Editors of the Annals of Natural History.

Gentlemen,—Though birds were my early favourites, I have never made much progress in ornithology. I have little leisure for such pursuits, and I shall merely subjoin a brief sketch of a pet Rook, with which I have the pleasure of being acquainted.

I visited him a few days ago at Ardrossan, and was glad to find, that though a dozen winters have passed over his head, he has all the vivacity of early life. He is a crow of aristocratic extraction; at all events he is of *high descent*, having been reared on one of the highest trees at Shieldhall, where his ancestors, it is believed, had their favourite residence for many generations. When he was well fledged he was brought down to the abodes of men, by one of the aspiring youths of Shieldhall, George Oswald, Esq., now in India, as a present to his aunt, Miss Oswald, and by her the pet crow, prized for his own good qualities, and loved for the donor's sake, was brought down to her sweet villa, at Ardrossan. Her villa was contiguous to that of Miss Hamilton, of Holmhead, and as our rook had then the free use of his wings, and was of a social disposition, he paid frequent visits to his neighbours, and soon formed acquaintance with the occupants of Miss Hamilton's poultry-yard, consisting of a cock and two hens. The intimacy increased; the visits became longer and longer, till at last the crow became domiciled along with them; and when Miss Oswald left Ardrossan, being unwilling to break asunder the ties of affectionate friendship, she left the crow in its adopted dwelling place. The longer they were acquainted the stronger did the friendship become, though it was evidently most ardent on the part of the crow. He was exceedingly attentive to his chosen friends, the hens, and would often arrange their feathers and dress them to his own taste, so that his officious services were sometimes rejected, as troublesome. The cock was still a greater favourite, and he roosted every night beside him, nestling under his wing.

After this platonic friendship had subsisted for several years, one of the hens became sick and died. During her illness he was unremitting in his attentions, waiting on her most affectionately; but he could not ward off the stroke of death. A still greater calamity awaited him, for the favourite cock also died. He was unceasing in his attention to him during his trouble, and when he died, he was so disconsolate that he would not taste food for several days.

At last old age, which indeed had carried off the others, crept on the remaining hen. When she became feeble and helpless, he scarcely ever left her for a moment, striving to cheer her by innumerable little acts of kindness. There were two steps up from the poultry-yard to the house in which they roosted, and when she became too weak to mount the steps, as he could not himself lift her up, he always came to the kitchen window, and kept up an incessant clamour till some of the servants came out and lifted her up.

For two days before her death, she could not leave the roosting-house, and he remained along with her, bringing her food, laying it down before her, and coaxing her to eat it.

Notwithstanding his unwearied assiduity and affectionate attentions, the poor hen died, and it was thought that he would not long have survived her. He was quite disconsolate. Life had lost its charm. He scarcely tasted food, and became altogether changed; so that from being lively and cheerful, and active, he drooped, and became timid and spiritless.

Some young poultry were purchased, in the hope that they might cheer him, but he seemed quite afraid of them and avoided their company.

After months had passed away he gradually recovered his spirits, and he is now as brisk and lively a bird as you can look upon. He is no longer afraid of the inmates of the poultry-yard; but though he associates with them, they have not succeeded in gaining his affections. He knows all the inmates of the house, and takes with pleasure, a bit of bread or of cold meat, from their hands. Unfortunately he is so much of an epicure, as to be particularly fond of a new-laid egg, and when the exulting cackle of a hen proclaims that she has deposited a treasure, there is generally a race between the servant and the rook, each being eager to seize the prize.

For a long time he was allowed the free use of his wings, but complaints were lodged against him by the proprietors of the neighbouring villas, that he was in the habit of perching on the roofs of their houses, and of picking the lime from the *skews*, casting it up into the air. This frolic was an overt act of mischief; but his accusers did not take into account that it was conjoined with another act of utility, for it was only the loosened pieces of lime that he removed, and chiefly, we doubt not, that he might get at the vermin concealed underneath. As no person would become bound for his more sober demeanour when he got into his alti-

tudes, the poor fellow was condemned to have one of his wings clipped, that as a degraded biped, he might, like his accusers, walk on the face of the earth. It is vexing to see him, when he attempts to fly with the remaining wing, falling down to the ground after being provokingly twirled round.

The only way in which he can now taste some of the departed joys of exalted station, is by mounting an old apple-tree in the garden, the lowest branches being within his reach, and when he has reached the highest, he shows how delighted he is, by proud cawings and cacklings.

He is a very cleanly bird, as his glossy plumage shows. When a pail of water is placed within his reach, he immediately enters it and splashes it about with great delight. He is still more delighted when there is a fall of snow, for he rolls in it, flaps and flutters amongst it, taking it up in his bill and throwing it about with the greatest glee and merriment.

Long live this kind-hearted rook! and as *we* have reason and revelation to guide, may we remember that we are bound to surpass him in his amiable qualities.

I am, dear Sirs, yours, &c.,

David Landsborough.

Manse, of Steverston, Ayrshire,
Feb. 13th, 1843.

For the Farmers' Cabinet.

Cattle Breeding.

Mr. Editor,—

I found in the last number of your valuable Cabinet of farming treasures, its usual rich collection of agricultural subjects; but of all these, nothing interested me so much as the *Circular* in the number preceding the last, from the committee of the New York State Agricultural Society, calling together a *Convention of breeders*, not of its own particular State, but from all parts of the Union. This is as it should be; and it is hoped that the call will be fully responded to, by an able representation from the several States. The circular is a short, simple, but able paper, summing up, in a few words, all that need be said on the subject. And no one, I think, will read it without feeling the importance of the objects it has in view, and the *judicious precaution* which has been taken to guard against that most unprofitable discussion on *the relative value of different breeds;* this question, when it has been argued, is treated as though the objects to be obtained, were always identical; as though circumstances in relation to stock, were always the same; as though there were but one soil, one climate, one market! A controversy of the same character also exists in relation to ox and horse labour; and always must exist, as long as it continues to be argued under all the variety of circumstances in which their respective advocates use and view them. It were to my thinking, about as wise to contend, under the same vague premises, which were the better conveyance, a wheeled carriage or a sleigh; a wheel-barrow or a wagon.

But to return—I anticipate from this investigation, to be made under "a full and free discussion," the establishment of certain generally allowed data, and fixed principles, by which animals of the respective breeds, are to be judged and estimated; and by which, the young breeder, if he be so minded, may govern himself, feeling some assurance that his stock will be judged on the same principles which have regulated their breeding. As things *now* are; to the question of, "What are you going to take to the fair?" I am frequently answered, "I really can't say; if I knew *who* were the judges, I should know what to do:" meaning no distrust of the *integrity* of the gentlemen who may be chosen as a committee; but knowing, as there are no fixed or generally admitted rules on the subject, they will, of course, measurably be governed by their own individual tastes and favourite points; one may consider quality as all in all—another may give the same importance to weight; a third, to style; a fourth, to size, &c.

Breeding improved stock is of recent date with us, and information is much wanted on the subject by our young men, and indeed by all of us: and as the very nature of our pursuit prevents that frequent personal interchange and comparing of opinion, so necessary to rapid dissemination of knowledge in any particular branch, we shall hope to see in your valuable periodical, a *full* report not only of the results to which the convention arrives, but if possible, of the materials from which its conclusions have been drawn. Yours, with respect,

A Breeder.

Aug. 22nd, 1843.

It is said that rents for land in the vicinity of Edinburgh, range from £7 to £15 per acre, also round about Dublin. In the Lothians, farm rents range from £4 to £6 per acre. "Farm 340 acres; old lease of 19 years, lately expired; old rent, £1,700, or £5 per acre. The farmer took off £18,000 to £20,000, and has bought a handsome estate in this neighbourhood, which he is improving; this farm is re-let, on a new lease for 19 years, at a rent of £2,000, or £6 per acre."—*Boston Cultivator.*

The Common Toad.

The simplicity and earnestness of the following description, and the kindly feeling, so indicative of the true lover of nature, which runs through it, have reminded us of Jesse's Gleanings, extracts from which, we have occasionally thrown before our readers. We take it from Bell's very entertaining History of British Reptiles, and are glad to have it in our power to place in our columns an article, so well calculated to do away the unreasonable prejudice that is too generally felt against the Toad.—Ed.

Few animals have ever suffered more undeserved persecution, as the victims of an absurd and ignorant prejudice, than the toad. Condemned by common consent as a disgusting, odious, and venomous reptile, the proverbial emblem of all that is malicious and hateful in the human character, it is placed under universal ban, and treated as an outlaw, both by man and boy throughout the country. Should I be able, by the following history of its habits and manners, to show that it is, on the contrary, highly useful, perfectly harmless, inoffensive, and even timid, and susceptible of no inconsiderable degree of discriminating attachment to those who treat it with kindness, it is hoped that some few individuals may be thus rescued from those barbarous acts of cruelty to which the species is almost everywhere subjected.

The true lover of nature, who, in the simplicity and singleness of heart which always belong to that character, seeks even in the less attractive of her works, for those proofs of wisdom and beneficence, by which they are all characterized, will rather find in their peculiarities, fresh indications of the same discriminating wisdom, and the same never-failing, though often, to the superficial observer, mysterious and veiled beneficence.

The toad belongs to a family, the sluggish habits of which are remarkably distinct from those of the lithe and active animals of which the frog is the type. Terrestrial in its general abode, it requires not the powerful paddles of the latter to propel it rapidly through the water, and its safety consists rather in concealment than in the power of escaping from its enemies. It bears, in fact, the same relation to the frog that the terrestial salamander does to the water newt. Like the rest of the amphibia, it becomes torpid during the winter, and chooses, for its retreat, some retired and sheltered hole, a hollow tree, or a space amongst large stones, or some such place, and there remains until the return of spring calls it again into a state of life and activity. Its food consists of insects and worms, of almost every kind. It refuses food which is not living, and, indeed, will only take it at the moment when it is in motion: such at least, is the result of my own observations upon the habits of this animal, which have been neither few nor brief. The toad, when about to feed, remains motionless, with its eyes turned directly forwards upon the object, and the head a little inclined towards it, and in this attitude it remains until the insect moves; when, by a stroke like lightning, the tongue is thrown forward upon the victim, which is instantly drawn into the mouth. So rapid is this movement, that it requires some little practice as well as close observation, to distinguish the different motions of the tongue. This organ is constructed as in the frog, being folded back upon itself; and the under surface of the tip being embued with a viscid mucous secretion, the insect is secured by its adhesive quality. When the prey is taken, it is slightly pressed by the margins of the jaw; but as this seldom kills it, unless it be a soft tender larva, it is generally swallowed alive; and I have often seen the muscles of the toad's sides twitch in a very curious manner, from the tickling movements of a hard coleopterous insect in the stomach. It will also take earth worms of considerable size, and it is a very curious sight to watch the manner in which the powerful and writhing worm is secured. If the toad happen to take it by the middle, the extremities of the worm are twined with great force and activity around the muzzle in every direction, in its attempts to escape; but the toad pushes one portion after another into its mouth, by means of the fore feet, until it all disappears, when it is swallowed whole.

Like the other amphibia, and the reptilia generally, the toad sheds its skin at certain intervals, the old cuticle coming off, and leaving a new one, which had been formed underneath in its stead. There are some very remarkable circumstances connected with this process, which I detailed many years ago to the Zoological Club of the Linnean Society, and of which the following is the substance. Having often fonnd, amongst several toads which I was then keeping for the purpose of observing their habits, some of brighter colours than usual, and with the surface moist and very smooth, I had supposed that this appearance might have depended upon the state of the animal's health, or the influence of some peculiarity in one or other of its functions: on watching carefully, however, I one day observed a large one, the skin of which was particularly dry and dull in its colours, with a bright streak down the mesial line of the back; and on examining further, I discovered a corres-

ponding line along the belly. This proved to arise from an entire slit in the old cuticle, which exposed to view the new and brighter skin underneath. Finding, therefore, what was about to happen, I watched the whole detail of this curious process. I soon observed that the two halves of the skin, thus completely divided, continued to recede further and further from the centre, and become folded and rugose; and after a short space, by means of the continued twitching of the animal's body, it was brought down in folds on the sides. The hinder leg, first on one side and then on the other, was brought forward under the arm, which was pressed down upon it, and on the hinder limb being withdrawn, its cuticle was left inverted under the arm; and that of the anterior extremity was now loosened, and at length drawn off by the assistance of the mouth. The whole cuticle was thus detached, and was now pushed by the two hands into the mouth in a little ball, and swallowed at a single gulp. I afterwards had repeated opportunities of watching this curious process, which did not materially vary in any instance.

The reproduction of the toad is in all essential points similar to that of the frog. The ova are in a similar manner impregnated during their passage, and their immersion in water is equally necessary for the development of the embryo. But instead of being expelled in a mass, they are arranged in a double series, placed alternately, and perfectly regular. The jelly-like mass in which the embryos are enveloped, forms a continuous line about the eighth or sixth of an inch in thickness, and extending to the length of three or four feet. The ova are deposited in the spring, about a fortnight later than those of the frog, and it is not until the approach of autumn, that the young ones, having cast off their tadpole form, come to seek their food on the land. The tadpole is smaller and blacker in all the stages of its growth than that of the frog; but there are no other peculiarities which are at all popularly interesting.

The stories of toads having been found in the very substance of the wood of a tree, and in the midst of a solid and hard rock, are too numerous, and too generally asserted and believed, to be passed over here, although I have to regret that, after many and urgent inquiries, and the examination of several asserted cases of that kind, I am unable to throw any light upon this doubtful and mysterious question. Some years since I had a toad sent me by a person of the highest credit, with the assurance that it had been taken alive out of a mass of indurated clay, of great depth, and that it had died immediately after being exposed to the air. But this case, like most, if not all, others of the same kind, is liable to the objection that the toad most probably fell into the hollow where the men were at work, and was taken up by them in ignorance of the mode in which it had come there. Numerous experiments have been made in order to try whether the toads would die on being artificially embedded in masses of clay, of plaster of Paris, in wooden boxes surrounded by plaster, and in other similar circumstances; but hitherto all have failed, although in some of them the animals have certainly lived for a much longer period than could have been expected, prolonged sometimes to many months, or even to between one and two years. Upon the whole, it appears to me, that whilst the many concurrent assertions of credible persons, who declare themselves to have been witnesses of the emancipation of imprisoned toads, forbids us hastily to refuse our assent, or at least to deny the possibility of such a circumstance, it must be confessed that we still want better and more cautious evidence, to authorize our implicit belief in these asserted facts. The truth probably is, that a toad may have lain hid in the hollow of a tree, during perhaps a whole autumn and winter, and found itself, on the return of spring, so far enclosed within its hiding place, as to be unable to escape. As this animal requires but little respiration, and consequently but little food to support life, especially when in a state of entire inactivity, the smallest opening would be sufficient to admit the requisite passage of air, and even the occasional ingress of a small insect; and afterwards, when the tree was cut up, the toad may have been found enclosed, and the opening may have escaped detection. To believe that a toad enclosed within a mass of clay, or other similar substance, shall exist wholly without air or food, for hundreds of years, and at length be liberated alive, and capable of crawling, on the breaking up of the matrix, now become a solid rock, is certainly a demand upon our credulity which few would be ready to answer.

That toads may be rendered very tame, and be made to distinguish those who feed and are kind to them, there are abundant facts to testify. I have possessed a very large one, which would sit on one of my hands, and eat from the other; and the story of Mr. Arscott's toad, in Devonshire, related in Pennant's British Zoology, is too well known to need repetition.

The opinions formerly entertained of the properties of the toad, were pre-eminently

absurd. It was highly poisonous, and this not only from its bite; its breath, and even its glance were fraught with mischief or death. The water which it expels from the reservoir communicating with the cloaca, was supposed to be the urine, as it is generally, indeed, up to the present time, and was believed to be highly poisonous. It is almost unnecessary to add, that this water is pure and limpid, and wholly without any deleterious qualities. The only circumstance which can be said at all to favour the bad character which attaches to this animal is, that there are situated upon the back and sides, numerous secreting follicular glands, the secreted matter from which is somewhat fetid and of an acrid quality.

The usual pace of the toad is neither leaping nor running, it is rather a kind of crawl; and on being alarmed, or threatened with danger, it stops, swells its body, and, on its being handled, a portion of the cutaneous secretion, which I have just mentioned, exudes from the follicles, and a discharge of the limpid water, which has been before alluded to, immediately takes place. Its quickest movement is an imperfect leap.

The general form of the toad is certainly far from prepossessing. The body is puffed out and swollen; the head large, flat on the top; the muzzle rounded, and very obtuse. There are no teeth either in the jaw bones, or on the palate. There is above the eyes a slight protuberance, studded with pores; and the parotids are large, thick, prominent, and porous, secreting an acrid fluid. Body covered with warts, which are larger above, and more numerous beneath. Fore feet with four toes, not at all palmated; hind legs of moderate length; the toes five in number, and slightly palmated. The colours are liable to some variation, but are always much lighter and brighter immediately after the removal of the old cuticle; the upper parts are of a dirty, lurid, or blackish grey, with sometimes a slight greenish tinge; tubercles more or less brown; beneath a dirty yellowish white, sometimes spotted with black.

For the Farmers' Cabinet.

Etrurian Wheat.

Respected Editor,—About three weeks ago, I became acquainted with the fact, that Commodore Charles Stewart had grown for the last two years, a wheat of singular excellence, the seed of which he received as a present from a personal friend in Italy. I immediately repaired to his farm in the State of New Jersey, near Bordentown, and learned from his farmer, that from nearly five and a half acres sown last autumn, the product was about one hundred and thirty bushels, weighing about sixty-three lbs. per bushel. He further stated, that whilst an adjoining field of grain had been completely destroyed by the winter and depredation of the fly, this perfected itself unscathed.

This grain differs materially from the so called Mediterranean, being lighter coloured, larger, and more symmetrical in its form, and decidedly possessing more farinaceous, and less glutinous matter.

This wheat is non-bearded—strong straw, and evidently adapted to first rate land, although the land of the Commodore, may fairly be estimated as either second or third rate.

With this brief and hasty exposition, I would take the liberty of referring such of your readers who may be disposed to experiment on a few bushels of this wheat,—having procured six myself—to call at the Seed Store of S. M. Powell, No. 23, Market street, Philadelphia, where if they *apply in time*, they may be accommodated, as the quantity on hand is rather limited.

Triticum.

Mad itch.—This is the name given in the Western States, where it most prevails, to a disease of cattle, commencing with apparently spasmodic motions or jerkings of the head, and itching around the nose and base of the horns. They will lick their sides and back, rub their heads, and the jerk or hiccup, inflates them with wind almost to bursting. This sympton is not, however, always present. As the itching increases, the animal rubs more furiously, froths at the mouth, and finally, from 12 to 24 hours, dies raving mad. Mr. Simms, of Indiana, after losing several of his cows by this disease, succeeded in curing the remainder by the following treatment. As soon as the animal was attacked, he gave it as much soot and salt as it would eat. In a few hours he gave from three-fourths of a pound to a pound of pounded brimstone or sulphur; and in the morning as many salts. It is the opinion of Mr. S., that sulphur alone would effect a cure, though he accompanied its action with salts. The cause of this formidable complaint, like that of milk sickness, in the same region, is unknown.—*Cultivator.*

Ploughing heavy soils when wet, does more injury than if the team were standing idle.

Bank of England.

Mr. Weed, editor of the Albany Journal, is now in England, and properly engaged in informing his readers of what he sees, hears and feels. The following will be interesting.—*U. S. Gazette.*

July 18th, 1843.

"We availed ourselves this morning, of the permission obtained by Mr. Wiggin, to visit the Bank of England. An official, (Macer or Usher) with laced dress-coat and three-cornered hat, escorted us to another servant of the Bank, who took us leisurely through an Institution that is so potent in controlling and regulating the money pulsations of Europe. It is situated on Threadneedle street, but fronts upon half a dozen others, and occupies an irregular area of eight acres. There are no windows through the exterior of the building, light being supplied by sky-lights and open courts within. There is a clock by which Bank time is kept, with dials indicating the time, in sixteen different offices. The Bank, with its various offices, is open from 9 A. M., till 5 P. M. It has also, its printing office, book-bindery, engraving office, &c., &c. Checks, blank books, &c., &c., are all printed within the Bank, as are the Bank notes. In the room where the circulating notes are printed, there are eight presses, all constantly employed, and which throw off about 8000 impressions daily. We saw two presses rolling off £5 notes, and others upon the various denominations, up to £1000, which is the largest note the Bank issues. The dates and numbers of the notes, are supplied by smaller presses in another room. The paper is delivered to the presses counted—a hundred sheets at a time—and when worked and returned, another hundred sheets are given. Pressmen work five hours, and earn from two to three guineas a week. In the office where redeemed notes are examined, cancelled, &c., one hundred and thirty-six clerks are constantly employed. When we entered this room our attendant was sharply reprimanded for bringing strangers there, but upon being informed that it was by "the Governor's order," we were allowed to pass. Forty thousand different notes are frequently sent to this office to be cancelled in a day. The Bank, you know, never re-issues a note. When returned to its counter for payment, the note is cancelled, filed away, to be burnt at the expiration of ten years. The armory of the Bank contains an hundred stand of muskets, with pistols, cutlasses, hand-grenades, &c., &c., and has a night-guard thirty-eight strong. In the office where the Bank notes are counted into parcels, tied with twine and placed in pigeon holes, we found five staid, methodical, matter-of-fact looking clerks, whom ye would trust for their faces. One of these old chaps, with the precision of 'Old Owen,' and the good nature of 'Tim Linkinwater,' took his keys and unlocked the depositories of paper wealth. The 'rags' of each denomination were in separate parcels. When we came to the 'high number,' he placed four packages in my hand, and remarked, 'You now hold £4,000,000 sterling in your hand, sir!' Yes, I actually was in possession of *twenty millions of dollars*, a sum much larger than the whole estate of John Jacob Astor! But it all returned to its pigeon hole, and left me a far happier man than those who are encumbered with such overgrown fortunes. Another of the old clerks opened the golden dormitories, where repose an endless number of bags, each containing eight hundred sovereigns. We were next and finally conducted to a subterranean region, enriched by gold and silver bullion. Here bars of the precious metals were as plentifully heaped as those of iron and steel are in the stores of our friends, Benedict, Townsend & Corning. The silver we did not meddle with, but we handled bars of gold, each weighing eight thousand pounds sterling, that were piled in barrow-loads of seventy thousand pounds sterling each. Much of this bullion was recently received from China, as an *instalment* upon the sum John Bull makes the celestials pay for their obstinate refusal to 'take opium.' The Bank of England has now in paper and specie, nearly thirty-eight millions of pounds sterling. There are eight hundred persons in its various departments, constantly employed within its walls."

The Orange Worm.—An insect has attacked the orange trees of Florida, which is doing a great deal of damage. The St. Augustine News, says, "Already this vegetable, one of the most useful of the best fruits produced in the troprical countries, has been persecuted by a plague, which destroys, little by little, its beautiful verdue, from the trunk to the branches, until it is annihilated completely. The proprietor sees with sorrow, the orange trees of his estate die, leaving him deprived of the benefits which would be produced by the sale of a fruit that competes in consumption and pleasant taste, with the pine apple.—*North American.*

Laziness travels slow and poverty thumps his heels.

For the Farmers' Cabinet.

To have good Crops.

In a late number of the American Farmer, I find a letter from G. B. Smith, Esq., to a young gentleman who made inquiry respecting the *modus operandi* of a man who was said always to have good crops; and it seemed to me there were a number of good hints in it well worth noticing. It is indeed true, that the great leading principles of agriculture are the same in all situations; but their application under particular circumstances, must be left to the good judgment and tact of the operator. *Deep ploughing* and *subsoiling* have become an essential trait in good farming, according to most of the agricultural papers I meet with. As *principles*, in a good system of farming, I esteem them highly; but there are soils that offer, in my opinion, exceptions to their adoption. Take, for instance, the light, shallow, sandy soils in many parts of Maryland, and so far as my experience and observation extend, we would not only do no good, but positive injury by deep ploughing. In such soils too, I have not observed any benefit from subsoiling. It is doubtless well, nevertheless, to deepen, if possible, even such soils as these, but the substratum must be thrown up with great care, and even loosened cautiously.

It is one of the crying evils of our practice, to farm more land than we can improve. When will we be persuaded to believe that it is more advantageous to cultivate ten acres of corn, that will produce five hundred bushels, than twenty-five acres, that will yield only the same quantity. I have latterly become entirely convinced of the exceedingly mischievous tendency of this trait in our agriculture; and until it is remedied, we shall certainly not arrive at that point in the cultivation of the soil, which you hold up to view in the new motto, given us in your last number. But I almost forgot my true character of a learner, and am venturing to give advice. Extracts from the letter mentioned above, I send with this; please give them a place in your paper, and oblige a

BEGINNER.

Frederic co., Md.

Farmers are apt to place too much dependence upon manure, supposing that if they apply that in sufficient *quantity*, nothing else is required of them. This error is not of course, of equally evil tendency to that of using no manure at all; but I was almost ready to say it was not very much less so. If the soil be not properly prepared for its reception, and if the manure be not properly *made*, *preserved*, and *applied*, it will matter little whether the "manure heap" resemble a mountain or a mole-hill. But it cannot be expected that the minute details of all the practice involved in all this, can be given in the space afforded by any periodical. One great point is to cultivate no more land than you can cultivate well, both as to labour and manure. If you have more land and less money and labour, than you can use with full effect, turn a portion of the land into money by selling it, and apply the proceeds to the improvement of that retained. Thus reduce the size of your farm to the capacity of your efficient forces,—labour and money,—instead of trying to extend your stinted forces over too wide a surface, and thus weakening them and destroying their efficiency. The second principle is, to put your soil into good condition, by *liming*, *deep ploughing*, *manuring*, and correcting its proportions of clay and sand when practicable. All land, in my opinion, will be greatly benefited by the application of lime. Some requires more, some less, to produce the same results, but all lands require it as a constituent of the soil. You will find lime most active on red lands, but it is useful on all kinds. *Deep ploughing* is, in my opinion, essential to successful farming. If you have a thin soil, by deep ploughing, liming and manuring, you will in a very few years, secure a deep soil. Even though you do turn up a portion of blue clay with your four-horse plough, don't be frightened at the sight of it. It is better to have blue clay mixed in a *deep* soil, than a hard pan of it under a thin one. But if you find too much clay thus turned up, correct its stiffness by carting sand upon it, and mixing it with the clay. A cart load of sand is often of more value to a soil than the same quantity of manure. Reverse the process, if any portion of the land be too sandy—carry clay to it, and thus stiffen it.

The advantage of deep ploughing is almost incalculable. It will ultimately make a deep soil, and a deep soil is essential to a good crop in a dry season. The roots of the plants strike deeply into it, instead of spreading out horizontally near the surface, as they are compelled to do in a thin soil, and are thus secured from the effects of drought. The rain sinks into a deep soil, and is thus preserved to the uses of the crop; while in a thin soil, it runs off, is soon evaporated, or stands on the surface, doing little good in the former cases, and absolute injury in the latter. I should not only plough deep, but I should follow in the furrow of the four-horse plough, with a good substratum plough, and this with the liming, judicious manuring,

and proper rotation, I should calculate upon as my security for a good crop, always. I believe this practice to be not only the best preventive of winter-killing and injury from drought, but also of injury from the fly. By this practice you secure a robust constitution to the plant, and, of consequence, thus enable it to withstand, without harm, the pressure upon the sap vessels occasioned by the flaxseed pupa of the fly, as it becomes embedded in its surface. In illustration of the good effects of deep ploughing, I will refer to the practice of *garden culture.* Who ever doubted that deep spading—even two or three spits deep—was not only useful, but necessary to success? And in what does a garden differ from a farm? In size,—nothing else.

Manure cannot always be obtained, nor can enough be made by every one for the whole farm. But a vast amount may be obtained and made, more than is now usually done. By a little management, the manure now made may be increased in value, without increase of quantity. Properly constructed manure pits should be prepared, with shed roofs to protect their contents from the effects of rain and sunshine. All manure should be deposited in the pits while *fresh*,—before the rain has washed away its salts, or the heat of the sun evaporated its volatile principles. Every kind of vegetable and animal offal should be thrown into the manure pits. The pits should be so situated near the barn or under it, that they would receive the urine of all the animals. There should be two pits, that the contents of one might be digesting, while the other was receiving materials. The mode of preparing the manure, time of applying it to the land, the quantity to be applied to the acre, the mode of application, &c., &c., are, and of necessity must be, left to the discretion of the farmer. There is, however, one kind of manure that I think is too much neglected, and it is often the only one that can be made available. I allude to turning in green crops. Turning in a clover lay for this purpose, is common enough; but I think the object may be attained more quickly by turning in crops of corn sown broadcast. Two, if not three crops of corn, could be grown and turned in, in the course of a season. That this kind of manure should afford all the benefit of which it is capable, the land should have been previously limed; or, if not previously done, a good dressing of lime should be turned in with the young corn.

General principles suit all, and the details of their application must be varied to suit each particular case. In conclusion, theoretical knowledge is invaluable to a farmer, as it is to all other professions, but it requires practical knowledge, intelligent perseverance, and untiring industry, to carry out its principles and produce their full effects.

Gideon B. Smith.

Needle Making.—The following description of a needle factory at Haverstraw, will be specially interesting to female readers:

Among the curious things I was permitted to examine, nothing awakened so much interest as the machinery for making needles. Let every good housewife rejoice with me. We are no longer to be dependent on foreign countries for an article of such primary necessity as needles. This, I am told, is the first attempt of the kind in America, and is now almost perfected. I saw needles in various stages of the processes by which they are made, from the wire prepared on the same premises, and was surprised at the facility afforded by the curious machinery which human ingenuity has invented to lessen the manual labour, and multiply the results of the numerous operations. The wire is first cut into lengths, which will make two needles each. The depressions where the eyes are to be made, and where the grooves are found in the finished article, are stamped in both needles by a single stroke of a machine, with which a single hand can turn off thirty thousand in a day. It is then turned over to a boy, who with another machine punches the eyes, and again, another separates the two needles, and smooths away any irregularities left or made by the former processes. But the eye of the needle is still rough, and must be bored by another process, which leaves it so smooth as not to cut the thread. After this, a man grinds a handful at a time on a common grindstone, holding them in his left hand, and giving them a perpetual rotary motion with the right, so that, when the operation is finished, they may be round as well as sharp. They are now to be "case-hardened," and finally burnished, all which is done by simple processes, in which immense numbers can be subjected to the operation at the same time.—*Christian Intelligencer.*

Nitrate of Soda on Strawberries.—The proportion in which nitrate of soda has been successfully applied to strawberries, is three ounces to the square yard, sprinkled regularly over the surface of the bed just as the plants are beginning to grow. Although it may injure the foremost leaves, the succeeding one will soon put forth with redoubled vigor.

American Institute of the City of New York.

SIXTEENTH ANNUAL FAIR.

THE great Annual Fair of this Institute, and exhibition of specimens of the productions of labour, art and genius of our country, will open at Niblo's Garden, in the city of New York, on Tuesday, the 10th day of October next, at nine o'clock, A. M. Friday and Saturday previous, are assigned for the reception of articles generally, whether for exhibition merely, or in competition for premium; and Monday, the 9th of October, for arranging the articles brought to the Fair. Exhibiters, whether for competition or not, desirous of favourable locations for their contributions, should bring them the first receiving day, or early on the second, as it will enable the managers to perfect the general arrangement of the articles in season for opening the Fair to the public. Special days and times will be allotted for cattle and other stock, and for certain articles, such as flowers, &c., designed for the Agricultural and Horticultural rooms. Future circulars will furnish additional particulars.

Farmers, gardeners, manufacturers, mechanics, artisans, and friends of improvement generally, throughout our Republic, are invited to second the efforts of the Institute with their wonted American spirit, which, for fifteen years past, has made its anniversaries the pride of our country, and imparted to them that national character which the legislature, in the formation of its charter, contemplated. Gold and silver medals, diplomas, and other valuable bestowments, will be conferred as rewards for skill and industry, under the sanction of competent and disinterested judges; and all the preparations and accommodations for both exhibiters and visiters, will be provided with the same liberality as at former celebrations.

The whole receipts of the Institute have ever been deemed as so much placed in trust to be dispensed for the promotion of American industry and improvement; and they have always been faithfully disbursed. This Institute, acting in the place of a County Agricultural Society, under a general law of the State, feels that the farming interest has high and continued claims for special regard. In addition to the exhibition of cattle, horses, sheep, swine, &c., efforts will be made to obtain a very full display of all the varieties of poultry. A ploughing match will also be held in this vicinity.

The productions of the factory and the work-shop, of the loom, the forge, and all the varieties of handicraft machinery, with new and useful inventions, will have places reserved for them. Steam power, for giving motion to machinery, and instruments for measuring the power required for various purposes, will be provided. Exhibiters should bear in mind that their specimens will be spread before more than two hundred thousand people, and be noticed in newspapers and publications that go into all parts of the world. A number of appropriate and eloquent addresses, beside the anniversary, will be delivered in the large saloon, and at the cattle show, ploughing match, silk convention, &c.

Special premiums will be bestowed on the exhibition of the greatest variety of valuable household manufactures. A conspicuous place will be reserved for the beautiful displays of the productions of female hands, which for fifteen years have delighted those immense throngs that have crowded our halls and saloons. Extraordinary efforts will be made to procure a full display of American silk. The statistical returns of increasing quantities the last few years, bring us inevitably to the conclusion, that this precious commodity is destined soon to rank with cotton and wool, in its importance as an American staple. For the purpose of accurately ascertaining the present condition and the future prospects of this branch of domestic industry, a silk convention will be held in the city of New York, some time during the sixteenth Fair. Every silk culturist and manufacturer in the Union, is invited to bring their best specimens, with all the correct data at their command; from which a report will be compiled and distributed through the country, that will, we trust, for ever settle the question in favour of the cultivation of silk in the United States. We call upon all silk culturists and manufacturers to aid in this laudable object. The cry is from all quarters loud and often repeated:—"Give us a new staple to diversify labour, and new employment for that which machinery has displaced, and consummate our practical national independence."

In the growth of silk, we have an article providentially adapted to all our varied soils and latitudes, well calculated to counteract sectional selfishness, and to produce a harmonious moral influence; and the vent for it in the markets of the world, will exceed our ability to produce for centuries to come. Let us, if the silk culture and manufacture are feasible, and can be made to remunerate, advance at once to the point required. And how can this be better ascertained, than

by a collection of facts by means of the coming exhibition and convention?

We invoke the aid of those far reaching, penetrating, disinterested minds, with true American hearts warm in their country's welfare, who can appreciate the benefits of associations like the American Institute, employing its whole means to invigorate industry, quicken invention, and impart activity and fire to genius, spreading its peaceful, genial influences far and wide, to make man better, and multiply and diversify his comforts. Every village, district and neighbourhood, and almost every family, should furnish some contribution, and be themselves welcome participators in this great annual national jubilee.

Dated at the Repository of the American Institute, New York, July 4th, 1843.

James Tallmadge, *Pres't.*
Adoniram Chandler, William Inglis, Shepherd Knapp, *V. Pres'ts.*
Edward T. Backhouse, *Trea'r.*
Gurdon J. Leeds, *Rec. Sec'ry.*
T. B. Wakeham, *Cor. Sec'ry.*
Trustees.

Horticultural Exhibition.

The Pennsylvania Horticultural Society will hold its fifteenth exhibition in the lower saloon of the Philadelphia Museum, corner of Ninth and George Streets, on Wednesday, Thursday, and Friday, the 20th, 21st, and 22nd of September, inst.

The committee charged with the preparatory arrangements, solicit contributions in *plants*, *fruits*, *flowers*, or *culinary vegetables;* and specimens of either, of a quality meriting distinction, will be thankfully received and publicly acknowledged. When transmitted from a distance, by public conveyance, the Society will cheerfully defray the cost of transportation. They may be addressed to Messrs. Landreth & Munns, at their Seed Warehouse, No. 65 Chesnut street.

Premiums for the following fruits, &c., to be competed for, on that occasion, will be awarded at 2 o'clock, P. M., on the first day (20th,) of the Exhibition, viz:—

FOR NATIVE GRAPES.

For the best Isabella, not less than six bunches,	$3
" " next best do. do. do.	2
" " best Bland or Powell, do. do.	3
" " next best do. do. do.	2
" " best Catawba, do. do.	3
" " next best do. do. do.	2
" " best Elsinborough, do. do.	3
" " next best do. do. do.	2
" " best of another variety, not less than six bunches,	3

FOREIGN GRAPES, RAISED IN THE OPEN AIR.

For the best Black or Red Hamburgh, four bunches,	$5
" " Hansteretto, do.	5
" " Black Constantia, do.	5
For the best Chasselas, four bunches,	
" " White Gascoigne, do.	
" " do. Frontignac, do.	
" " St. Peter's, do.	
" " of another variety, do.	

FOREIGN GRAPES, RAISED UNDER GLASS WITHOUT ARTIFICIAL HEAT.

For the best, not less than four bunches,	
" " next best, do. do.	

FOREIGN GRAPES, RAISED UNDER GLASS WITH ARTIFICIAL HEAT.

For the best, not less than four bunches,	
" " next best, do. do.	
For the best peaches, not less than one peck,	
" " next best do. do. do.	
" " best do. do. two dozen,	
" " best do. do. one bushel,	
" " next best do. do. do.	
" " best Seckel pears, not less than one peck.	
" " next best do. do. do.	
" " best Butter do. do. do.	
" " next best do. do. do.	
" " best Bartlett pears, not less than half a peck,	
" " best pears, of another variety, not less than one peck,	
" " next best do. do. do.	
" " best and most numerous named varieties of pears,	
" " next best do. do. do.	
" " best apples, not less than one peck,	
" " next best do. do. do.	
" " best do. do. one bushel,	
" " next best do. not less than one peck,	
" " best and most numerous named varieties of apples,	
" " next best do. do. do.	
" " best quinces, not less than half a peck,	
" " next best do. do. do.	
" " best nectarines, not less than one dozen,	
" " best plums, not less than two dozen,	
" " next best do. do. do.	
" " best water melons, not less than three in number,	
" " next best do. do. do.	
" " best nutmeg melons, or variety thereof, not less than three in number,	
" " best potatoes, not less than one bushel,	
" " next best do. do. do.	
" " best sweet potatoes, do.	
" " best onions, not less than four dozen,	
" " best cabbage, not less than six heads,	
" " next best do. do. do.	
" " best Red cabbage, do. do.	
" " best carrots, garden culture, two dozen,	
" " best lettuce, not less than six heads,	
" " next best do. do. do.	
" " best endive, blanched, do.	
" " best salsify, not less than two dozen,	
" " best display of honey,	
" " next best do. do.	
" " best fifty named varieties of dahlias,	
" " next best fifty named varieties of dahlias,	
" " best twenty named varieties of dahlias,	
" " next best twenty named varieties of dahlias,	
" " best American seedling parti-coloured dahlia,	
" " best American seedling self-coloured dahlia,	
" " best ten named varieties of dahlias, grown by amateurs,	
" " next best ten named varieties of dahlias, grown by amateurs,	
" " best dahlia, grown by amateurs,	
" " best and most appropriate design, formed of cut flowers, &c.	
" " next best do. do. do. do.	
" " " " do. do. do. do.	
" " best pair of wreaths, for festooning,	
" " next best pair of wreaths, for do.	
" " best bouquet,	
" " next best bouquet,	

To prevent confusion, it will be necessary that all contributions be presented on the Monday and Tuesday previous to the Exhibition.

Bouquets on the mornings of each day.

All articles will be returned to the contributors, unless otherwise directed, of which the Committee will expect to be duly notified.

PETER MACKENZIE,
ROBERT BUIST,
WILLIAM CHALMERS, JR.
JAMES D. FULTON,
ROBERT KILVINGTON,
JOHN SHERWOOD,

Committee of Arrangement.

Important Invention.

MR. MILLER, an ingenious saddler, of Lothian street, Edinburgh, has devised a mode capable of preventing even the strongest and wildest horse from escaping the control of its rider or driver. On Wednesday last, Mr. Miller made a public trial of his invention in Queen street, in presence of Professor Dick, Mr. Wordsworth, and a number of individuals, including several of the county gentlemen, and all of approved knowledge. For this purpose, a strong, active, hard-pulling, and notorious run-away horse, was procured, and yoked in a gig, when Mr. Miller boldly took his seat, and requested some of the company to irritate the animal, with which desire they reluctantly complied. Off set the horse, but he had scarcely made a few springs, when Mr. Miller at once subdued him, bringing him to a literal stand-still. This was repeated several times, every means being employed to provoke still further, the restive animal; but he was as often brought up by Mr. Miller, and apparently with a ready facility. All present expressed themselves delighted and surprised, not more by the efficiency than the neatness and simplicity of the invention. The apparatus can, we understand, be obtained at a trifling cost, and can, besides, be used with any harness or riding-bridle, without alteration.—*British American Cultivator.*

SALT AS A MANURE.—I can bear testimony to the beneficial effects of salt as a manure, when judiciously employed. My garden, when I came to it, was so infested with slugs, as to render it almost impossible to preserve a vegetable from their ravages, more especially from those of a large species, half as large as a man's thumb, provincially termed the herring-back slug. By the advice of a neighbour, I procured a quantity of salt, which I kept in a dry shed; and when a quarter of land was cleared of its crop, I sprinkled it all over with salt, and allowed it to remain for a day or two before it was dug in. I likewise, on moist evenings, when the slugs were most active, went carefully over the garden and gave it a slight sprinkling with salt, even amongst the growing crop. This effectually destroyed those pests without injuring the vegetables, and my garden is now comparatively free from them. The salt I use is a coarse salt.—*Gardener's Chronicle.*

THE FARMERS' CABINET,
AND
AMERICAN HERD-BOOK.

PHILADELPHIA, NINTH MONTH, 1843.

WE would remind our friends that the Convention of Breeders, called by a Circular from the Committee of the State Agricultural Society of New York, and which we published on page 382, of last volume, will be held at the Library room of the American Institute, in New York, on the 17th of next month, at 7 o'clock, P. M.

Those who feel an interest in good cattle, in this vicinity—and who is there does not?—will, we trust, take care that they are well represented. Feeders and butchers, and barrelers, can none of them plead indifference to the objects of the Convention; and they should bring their experience and judgment to bear upon the discussions. The advocate of the "Pumpkin-rump," as well as of the "Straight line," will doubtless be heard, and each may help to settle more definitely than is now the case, what are the constituents of excellence in each of the breeds.

CAN any of our friends inform us where a genuine Southdown buck, coming two years old next spring, may be obtained in this vicinity?—the price, &c.

THROUGH the kindness of a friend, we have from time to time, been gratified in looking over the Edinburgh edition of Professor Johnston's Lectures on Agricultural Chemistry and Geology. Extracts from them have occasionally given solidity and variety to our pages. D. K. Minor, 23, Chambers street, N. Y., has recently published in neat, and convenient, and cheap form, Part third, of these Lectures, embracing the Improvement of the soil by mechanical and chemical means. This third part is issued previously to the first and second, that the latest information may be put in the hands of the practical man at the earliest period. The first and second parts are promised shortly, and the fourth, immediately after its receipt from England. It is for sale in this city by W. H. Graham, and by Kimber & Sharpless,—price 31¼ cents.

There is at this time a general spirit of inquiry among practical farmers, in relation to the use of *concentrated fertilizing agents*, which will be greatly aided and properly directed, by the labours of Professor Johnston: and as an extensive manufacturer of these concentrated manures, the publisher very properly and appropriately throws these lectures abroad in an American dress.

D. K. Minor, having made arrangements with our Board of Health, for the deposite of the material, has lately commenced operations for the manufactory of Poudrette in the North-western part of this city. We have, within a few days, received from him an invitation to visit his establishment, in order, as he says, "that you may be satisfied from your own observations in relation to the mode of preparation,—that you may *know* that the materials used in the process, are of *themselves* valuable fertilizers, and that the process is one calculated to *retain*, rather than to dissipate the fertilizing properties of the night-soil." We have not been able, as yet, to avail ourselves of the invitation, but shall in the course of a few days.

Having been for more than six years, engaged in New York, in the preparation of *concentrated manures* —but more especially of Poudrette—and having overcome the difficulties and discouragements, and prejudices, which were continually throwing themselves across his path, D. K. Minor brings with him all the advantages of long experience, and commences his operations here, under very favourable circumstances. He contemplates carrying on the business in this city, next season, more extensively even, than he does in New York, thereby enabling all farmers and gardeners, who desire to use it, to obtain it at the cheapest rates—of the best quality, and at any time. We consider the subject well worthy the attention of all who want manure. Easy of transportation, and of itself the strongest food for plants, farmers and others are invited to try it, and let it speak for itself. We expect to have the article at our office, in a few days.

The Farmer's Manual, a Practical Treatise on the nature and value of manures, with a brief account of the most recent discoveries in Agricultural Chemistry, by F. Falkner, Esq., author of British Husbandry, has been recently published by George S. Appleton, 148, Chesnut street, Philadelphia, and D. Appleton & Co., New York:—price 31¼ cents. It would really seem as if both authors and publishers, were determined to take our agricultural readers by storm. They have sometimes been charged with entertaining a decided disrelish for "book farming," and now, forsooth, book after book, is thrown before them, in rapid succession, and withal so well written, and so judiciously put together, that it has become both their interest and their pleasure, to buy and to read them: and doing this, they can hardly help being benefited by them, if they would. The Manual before us, for which the publishers will accept our thanks, is well arranged, and thoroughly practical, and is certainly not less calculated to be useful, than many of the best that have preceded it. The motto of our author is, "Muck is the mother of money:" and his main effort, as his title implies, is to instruct the farmer in the increase, and good management of the contents of his barn-yard:—that bank, as it has sometimes been called, whose issues are just as good as old gold. "To increase the quantity, and preserve the fertilizing properties of farm-yard manure by skilful management, and to provide efficient substitutes, from every available source, are objects so deeply interesting to the agriculturist, and important to the public welfare, as to require no argument to enforce attention."

It is twelve or fifteen years since our good city was permitted to luxuriate in such an abundance of peaches as we have had for several weeks past. Our friends in Jersey and Delaware, are in the midst of a rich harvest; for notwithstanding their plenteousness, they have all through commanded a fair price to the grower, and yet been so reasonable, as to be within reach of every class. While they, who buy nothing but the best of every thing, may, for five and twenty, or thirty cents a half peck, indulge in peaches whose beautiful variety of colour, and richness of pulp, to say nothing of their size, would astonish the taste of a West Indian, who had all his life before, concluded there was nothing more delicious than his own orange; those whose purses are shorter, or whose tastes are less fastidious, procure an excellent article, for one-third or one-half the sum. We do not pretend to any thing like accuracy in the calculation; but as the result of some inquiry from others, and our own observations, we believe there have, for several weeks past, landed daily, at our wharves, not less than from three, to six thousand baskets, of this wholesome fruit.

The friend who forwarded the Delaware Republican of the 1st inst., calling attention to the Ploughing match, &c., at Wilmington, on the 13th and 14th insts., did not bear in mind, that it would be past, before our paper was out.

The first No. of Vol. 4, of the Western Farmer and Gardener, and Horticultural Magazine, comes to us with a large amount of valuable matter. This work is published monthly, at Cincinnati, at one dollar a year, by R. P. Brooks, and is ably edited by Charles Foster. The Horticultural part will be superintended by Robert Buchanan, President of their Horticultural Society, recently organized. From the list of premiums offered by the Hamilton County Agricultural Society, we should apprehend their movements are quite spirited, and that they mean to do good: indeed, much may be looked for, from the neighbourhood of the Queen city.

Some time ago, we took occasion to commend some of our Agricultural Societies, who, instead of money, offered many of their premiums in valuable Agricultural works, or papers. We are entirely impressed with a belief that premiums offered of this character, which are calculated to induce a spirit of inquiry, and instruct in their calling, those who may receive them, are far more appropriate than silver cups, medals, and spoons. These last may gratify for a time, and be forgotten; but our best agricultural periodicals, and standard works, that cost but little, will create, and satisfy a laudable inquiry. They may do much to bring about an improved husbandry, that shall not only change the whole face of our country, but multiply the comforts of tens of thousands. They are at once the most efficient and enduring agents, that can be employed to promote the objects intended by the Societies which dispense them.

Since we last went to press, the 13th and 14th No's. of the "Farmer's Encyclopedia" have been received from the publishers, Carey & Hart, of this city. The Essay on Manures, in the 13th Number, is particularly valuable.

In relation to the letter of G. B. Smith, Esq., first published in the Baltimore American, and to be found on page 45, of this Number of the Cabinet, Dr. Paul Swift, of this city, makes a communication, which appeared in the U. S. Gazette, of the 9th inst., in which he says: "I have in my possession a number of specimens taken from the woods in Barnstable Co., Mass., in 1839, where they appeared in great numbers; the date may be relied upon, as it was attached to the preserved specimens at the time." It will be remembered, that this was one of the years in which G. B. Smith was unable to trace the locusts. The Doctor also remarks, "As an item of interest in the history of this insect, it may be mentioned that some of our islands seem not yet to have been reached by them. I was then residing on the Island of Nantucket, where they had never been known to make their appearance, and imported from the neighbouring mainland, several dozens, and placed them in two orchards, by the consent of the owners, which was easily obtained, when the common, but onerous notion, of their devouring propensities was removed."

THE HORSE, by William Youatt:—together with a general History of the Horse—a Dissertation on the American Trotting Horse—how trained and jockeyed—an account of his remarkable performances;—and an Essay on the Ass and the Mule, by J. S. Skinner, Assistant Post-master General, &c.;—published by Lea & Blanchard, Philadelphia. In introducing this very neat edition of Youatt's well known book, on "The Horse," to our readers, it is not necessary, even if we had time, to say any thing to convince them of its worth: it has been highly spoken of, by those most capable of appreciating its merits, and its appearance under the patronage of the "Society for the Diffusion of useful Knowledge," with Lord Brougham at its head, affords a full guaranty for its high character. The remarks of J. S. Skinner, the American editor, occupying more than 60 pages, preliminary to the main work, are much to the purpose, as all will readily suppose, who are acquainted with his partiality for, and extensive knowledge of the history, habits, &c., of this noble animal. The Essay of about 15 pages, at the close of the volume, treating of the Ass and the Mule, also by the American editor, is very amusing as well as interesting: we have long been aware of his kindly feeling for that abused *hybrid*, the mule, and his convictions that it did not receive from us, the consideration it deserves. We sincerely hope the Essay may have its proper influence in raising the character of the mule, and introducing him into better company, and to a situation and standing, which we also, entirely believe him entitled to.

The book is a very valuable one, and we endorse the recommendation of the editor, that every man who owns the "hair of a horse," should have it at his elbow, to be consulted like a family physician, "for mitigating the disorders, and prolonging the life of the most interesting and useful of all domestic animals." The editor and publishers, will accept thanks for the copy sent us.

To farmers and breeders who wish to increase their stock of good cattle, Paschall Morris' Sale, on the 26th inst., offers an opportunity of rare occurrence.

The "Economy of Farming," translated from the German of Professor Burger; with copious notes from the works of Thaer, Veit, Schwertz, Sprengel, Petri, &c., by E. Goodrich Smith;—published by George S. Appleton, of this city; Leavitt & Trow, New York; and Crocker & Brewster, Boston:—price 50 cents. We have known but little comparatively, of German agriculture, and a work of this kind, just now, is particularly appropriate. Having been originally written "to furnish a text book for teachers, a manual for scholars, and a guide to the farmer," we find in it abundance of that detail, which we think is too little understood in this country—and of that minute calculation which the peculiar circumstances of the German agriculturist, growing out of the high value of money—the price of labour, and the rent of land, render essential to the profitable management of his affairs. The nice calculations of profit and loss—of different modes of operation—and of the kinds of stock to be kept for fattening, or for labour, &c., will afford some new views, as well as valuable hints, to many of our farmers. We acknowledge our obligations to the Philadelphia publisher, for a copy of the work.

Our neighbours in Delaware, have come out against the Canada Thistle, with something like a *posse comitatus*, and have raised the cry of "no quarter." An enterprising friend suggested the other day, that where the patch was small, or the number few, there was hardly a better way of treating them, than by keeping them for a whole season, or longer, if necessary, thoroughly covered with boards. Thus, not being able to leaf at all, they must perish.

We invite attention to the Annual Exhibition of the Pennsylvania Horticultural Society, to take place next week. A list of premiums will be found on page 68. The Florist and the Horticulturist may anticipate a rich display. Competition, it will be remembered, is not confined to persons in this State.

The Philadelphia Society for promoting Agriculture, will hold its Annual Exhibition at the Lamb Tavern, on the Lancaster turnpike, one mile from the Market street bridge, on the 4th and 5th of next month. The trial of ploughs will take place on the 6th. A list of premiums, &c., will be found on page 380, of our last volume. Competition is open to the whole Union.

The New York State Agricultural Society has made arrangements to hold its Cattle Show and Fair, at Rochester, on the 20th and 21st of this month. They are anticipating an exhibition of farm stock, in many respects superior to that held in Albany, last autumn; and in horticultural and domestic products, they expect to do themselves great credit.

The first Number of Colman's Agricultural Tour in Europe, is expected to appear about the beginning of the coming year. The whole work will be comprised in ten numbers, of at least one hundred pages each, elegantly executed in an octavo form, stitched and covered, and embellished with necessary and useful drawings and engravings. A subscription paper is at our office, where we will, with pleasure, take the names of subscribers.

Sale of Durhams, &c.

The subscriber will sell at public sale, on Third-day, the 26th of Ninth month, (September,) at his farm, near Westchester, his Stock of SHORT-HORN DURHAM and Grade Cattle, comprising more than twenty head of cows, heifers and calves. The young Stock are many of them from superior milkers, and were sired by the Imported Bulls, *His Grace*, from the herd of the Duke of Leeds; *Yorkshireman*, bred by T. Bates, Kirkleavington, England; and *Gleddoe*, from the stock of T. Paley.

Two of the Cows are imported, and one of them, *Bessy*, celebrated for her milking qualities, and believed to be unsurpassed as a dairy cow. The whole have been bred with care, and are well worthy the attention of those wishing to improve their stock, many of them having taken premiums at the Philadelphia and Chester, and Delaware County Exhibitions.

Also, at the same time and place, the thorough-bred Durham Bull, *Henry Clay*, also, a premium animal; and some Bakewell sheep. Catalogues will be ready a few days previous to sale.

Sale to commence at 2 o'clock, P. M.

PASCHALL MORRIS,
Allerton Farm, near Westchester.

Ninth mo. 1st, 1843.

The quantity of rain which fell during the Eighth month, (August,) 1843, was a little more than nine inches and a quarter. ..... 9.255 inches.

Penn. Hospital, 9th mo. 1st, 1843.

During the great rain which we had on the 5th ult., in this city, there fell at the Hospital, 4.033 inches of water. Along Chester, and Ridley, and Crum creeks, where so much damage was done, there must have fallen a good deal more.

They had, at New York, on the 21st and 22nd ult., a great flood of rain. According to the results given by the rain gage, at Erasmus Hall, Flatbush, L. I., four or five miles from New York, there fell on those two days, 9.13 inches: which is a greater quantity than had fallen in any equal period, since the register has been kept.

Poudrette,

In barrels containing four bushels each,—manufactured in Philadelphia—of the very best quality; for sale at the Cabinet office;—price one dollar and fifty cents per barrel, or seven barrels for ten dollars:—or thirty cents a bushel, at the manufactory.

SHORT ADVERTISEMENTS

The subject matter of which, may correspond with the agricultural character of this paper, will be inserted at the rate of one dollar for each insertion of ten lines or less; and so in proportion for each additional line. The money to be paid in advance.

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Terms.—One dollar per annum, or five dollars for seven copies—*payable in advance.*

All subscriptions must commence at the *beginning* of a volume. Having lately struck off a new edition of one or two of the former numbers, which had become exhausted, we are now able to supply, to a limited extent, any of the back volumes. They may be had at one dollar each, in numbers, or one dollar twenty-five cents half-bound and lettered.

For five dollars paid in advance, a *complete set* of the work will be furnished in numbers, including the eighth volume. The whole can thus readily be forwarded by mail. For twenty-five cents additional, per volume, the work may be obtained neatly *half-bound and lettered.* Copies returned to the office of publication, will also be bound upon the same terms.

By the decision of the Post Master General, the "Cabinet," is subject only to newspaper postage: that is, one cent on each number within the state, or within one hundred miles of the place of publication out of the state,—and one cent and a half to any other part of the United States—and Post Masters are at liberty to receive subscriptions, and forward them to the Publisher under their frank—thus affording an opportunity to all who wish it, to order the work, and pay for it without expense of postage.

Joseph Rakestraw, Printer.